

THE AMERICAN FARMER



"O FORTUNATUS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." Virg

Vol. XI.

BALTIMORE, OCTOBER, 1855.

No. 4.

WORK FOR THE MONTH.

OCTOBER.

As it is probable that there are many wheat growers who have not seeded their wheat, we would advise all such to get it in as early in this month as possible, as the nearer the first it may be, so much the better will it be. By all means, they should strive to get it in by the 10th of the month, or by the 15th at farthest, in order that the roots may have time to take strong hold of the soil before hard frosts set in.

There are considerations of great importance to be attended to in the preparation of the ground. In land where the subsoil is not wet, the ploughing should be as deep as a strong team can well penetrate: the ground which may be ploughed one day, should be harrowed and rolled the next, in order that these implements of pulverization may have the better chance of reducing all the clods into fineness of tilth, as fine tilth is essential to successful wheat growing.

With these precautionary remarks we shall now proceed to point out such matters as in our opinion should claim immediate attention on the farm.

WHEAT.

As our observations last month were full upon the subject of seeding wheat, we shall not detain our readers upon that point further than to refer them to what we then said, and to admonish them of the necessity of seeing personally, that the work be done faithfully and well.

RYE.

This crop should have been seeded in August, but may still be put in, if done in the first week of this month, indeed later; for we recollect that some nineteen years ago, we were compelled by circumstances beyond our control to delay sowing our rye until the 24th of November, and that on that night a heavy frost came and froze the earth up so strongly that the grain did not come up till the 10th of the following March: Notwithstanding the lateness of the seeding the crop proved an excellent one. We do not mention this fact to encourage late sowing, for we are the advocate of doing all things on a farm in season, but merely to show, that late sowing may, under peculiarly favorable circumstances, succeed well.

THRESHING OUT GRAIN.

We repeat our advice to our agricultural friends to have all the grain they intend for market threshed out as soon as they conveniently can, in order that they may be ready to avail themselves of any advantageous turn of the market, and thus avoid falling into the traps so ingeniously set for them by speculators, who are ever on the alert to appropriate to themselves those profits which, in justice, should go into the pockets of the producers. In recommending early threshing, we do not wish to be understood as advising that the grain when prepared for market, should be immediately carried thither, for glut, as we all know, depress prices; but because we desire to see the producers place themselves in a position to get the best remuneration for the products of their labor.

We understand that there are orders here from both England and Germany for wheat, and that their agents are limited as to price; but be these orders limited or not as to price, the fact of their being here, shows that there is such a demand abroad as should make farmers cautious about parting with their crops unless they are well paid for them. Speculators, like corporations, are without souls; they are ever ready for a shave, and unscrupulous as to the means by which they effect it.

HOGS FOR FATTENING.—THEIR TREATMENT, &c.

If you have them not already prepared, you should forthwith prepare your pens and yards for the hogs you intend to fatten. The pens should consist of two apartments, the one for them to sleep in, the other to feed in; they both should be tight, dry, warm, with doorway leading from the feeding room into an enclosed yard; the yard should be provided with a rubbing post. When the masts of the forest are consumed, the hogs should be withdrawn and confined in their fattening quarters, as it is important that they should be placed there in in good condition, which condition they will be in, as long as the mast affords them ample supplies of food. Before removing the hogs from the woods, or other pasture, have your hog-yard covered some five or six inches deep with marsh, or river mud, cleanings of ditches, wood's-mould, road-scrapings, the earth from headlands, or any other rough materials capable of being converted into manure. Every two weeks during the fattening season remove these substances from the yard into some convenient place, form them into compost heaps,

intermixing therewith 1 bushel of plaster with every 20 loads, and cover the heaps with earth, and compressing the earth with the back of the shovel. Each covering of the substances named, as removed, should be replaced with others. Let not the trouble and labor this may give you, deter you from following our advice, as for every hog you may have in your pen, you may thereby obtain two loads of as good manure as ever fertilized the earth. Than hog manure, the solid and liquid, there is no animal manure so rich, or more so, in those elements which tend to fertilize the earth and ensure large crops. This will readily be admitted when we reflect upon the fact that every 100 lbs. of urine of the hog contains 5.64 per cent. of urea with a little slime and albumen—which may be considered as equal, on decomposition, to so much ammonia, and that the salts amount to 1.76 per cent.; while the solid and liquid, taken together, ranks hog-manure as equal to night-soil.

When your hogs are first taken up for fattening, they should receive two or three doses of flour of sulphur, and as many of copperas, say a table spoonful at a dose, to be given in messes of bran, or meal, made into slop, at intervals of a day apart. Their food for the first two or three weeks should be pumpkins, apples and roots, or other vegetables which should be boiled, or steamed, and made into mash with bran or meal, the latter should be increased from day to day, so that when they come to have corn, or meal altogether, the change of diet may not be injuriously felt by them.

In connection with the subject of feeding grain, we would remind our readers that *ground corn meal*, cooked, will go 30 per cent. farther in fattening hogs than will the *raw grain whole*, and that the whole grain when boiled, will go 15 or 20 per cent. farther than when not boiled.

During the entire period of fattening the hogs, should be regularly supplied with *charcoal, ashes, rotten-wood, and salt*.

COW AND CATTLE YARDS.

These should be provided with warm, dry sheds, facing the South or South-East, for the animals to retire to in inclement weather, and to sleep in—the sheds should be divided into stalls, and provided with racks and mangers to feed in—the beds of the stalls should be so graded to be higher than the yard, so as to keep the stalls dry, and, if possible, the cattle should be provided with straw or other coarse litter as bedding, which should be removed twice a week and replaced with fresh materials. The young and old cattle should have separate yards.

Before you bring your cattle into the yards for winter quarters, have such rough materials as we have recommended hauled therein, and spread on your cow and cattle yards, to the depth of 12 inches. Let your yards be *basin-shaped* so as to prevent the escape of the urine. Spread a dusting of plaster over these rough materials when first fashioned into shape, and occasionally as the deposits of your stock accumulate, give the yard a dusting of plaster.

If practicable, in about six weeks after you have brought your cattle into the yards for winter, you should add 6 inches in depth of rough materials, preserving the basin-like shape of the yard, adding plaster as before. If you follow this advice, next spring when you come to remove your manure to the fields, if you mix it up well as you throw it into your carts and wagons, every pound of it will be bet-

ter than any cow-yard manure you ever made in the ordinary way, because the ammoniacal elements of the manure will have been measurably preserved from deterioration.

COLLECTING MATERIALS FOR COMPOST.

We hold these to be agricultural truths:—*Without there be mould in the soil, or the elements for forming it therein, no soil can be fertile, though it may have in it all the organic substances. Without the nutritive principle—organic principle—be present in the soil, infertility is an inevitable consequence. Mould consisting alike of vegetable and animal substances, is the vital principle, the life-spring of vegetable production. And as it is so, every cultivator of a farm should consider it among the first of his duties to collect all the available substances on his farm, and compost them with his stable and barn-yard manure. Two loads of marsh, river, or creek mud, or wood's-mould, leaves or pine shatters, or any other kindred substance, if mixed this fall with one of stable or barn-yard manure, and formed into a compost heap, made in a conical form, and protected by a few inches of earth, will, by next spring be a more fertilizing body than is barn-yard or stable manure alone, kept as it usually is. Therefore, as such is the fact, interest should indicate to all that their true policy is to set to work at once, and add to their supply of manure in the way we have pointed out, and to consider the labor, time, and money, thus laid out so much capital placed out at compound interest; for that the result would prove such to be the case there can be no room for doubt or question. Without mould no soil can successfully grow crops.*

We have heard some farmers say that they had tried marsh mud, river mud, and creek mud, without seeing any good result from it. Now why was this so? Simply, because they have used it without admixture with animal manures—because they had used them without using the proper means to encourage decomposition in their various elements. If they would spread them on their cattle yards, or mix them with their stable and cow-yard manures to bring on decomposition, the result would be very different, and they would then, if candid men, confess that they had misunderstood the virtues of these substances, and like the late lamented William Carmichael, Esq., of Queen Ann's county, confess, that when treated in the way we have pointed out, they were among the best of manures.

We conclude this part of our month's advice by repeating, that the collecting of materials, and the formation of compost heaps, should be among the first objects—the first duties, of every cultivator of the earth, as without putrescent manures—without mould, no soils can be preserved in a profitable state of fertility, as mould is to every soil what blood is to the animal system.

PUMPKINS.

You should see to it that your pumpkins are gathered and stored away before the frost overtakes them. In pulling and hauling them, care must be observed not to bruise them. As to the proper time for gathering them, your own good judgment must determine that point. When hauled in, have them stored away in your barn. As they are of a perishable nature, they should be among the first vegetables fed out to your cattle and hogs. In feeding them out, bear in mind that by having them cooked you will greatly add

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to their value as a nutritive food. For hogs it is especially necessary that they should be cooked, as it prevents their purging these animals. When cooked they should be treated to a little salt.

ROOTS OF ALL KINDS.

These should be gathered and put away before they are injured by the frost—they should be gathered in dry weather.

TIME OF PUTTING UP HOGS TO FATTEN.

The best time to commence fattening your hogs, will necessarily depend upon your supply of mast in your woods—if your hogs be there. Whilst they find enough in the woods to keep them in good thriving condition, the hogs may be permitted to remain there. But we desire to impress the fact upon your consideration: hogs take on fat much better in weather moderately warm than they do when it is cold; that in cold weather much food is required to keep up the heat of their bodies, hence, that all abstracted for this purpose is a tax upon flesh and fat.

ORCHARDS.

Treat the trees in your orchards as we advised last month.

PLANTING OUT YOUNG ORCHARDS.

Upon this subject we refer you to what we said last month.

DRAINING WET LANDS.

If you have any wet lands, permit us to remark that you will consult your interest by having them drained.

It has been very aptly said by a very able agricultural writer that, *to lay manure on wet soils, is indeed to throw money away.* This is a bold assertion, but it has truth to support it. An excess of water in a soil keeps the ploughing back fully three weeks in the spring, and in fact greatly delays the ripening of the crops grown on such soils: the decomposition of organic substances therein is retarded; unfriendly vegetable acids are formed to the great detriment of the crops: in seasons of drought wet lands become dry and compact, and prevent the roots from penetrating the soil, and from the hardened condition of the land they are deprived of the benefit of the dew and the air; hence, when wet soils are stiff clays, the crops suffer as well in wet weather as in a time of drought: the roots of plants grown on a wet soil receive their food in so diluted a state, or in such insufficient quantities as to prevent a vigorous and healthful growth, and hence, also a curtailment in the quantity of the produce: excess of water destroys the fibrous portion of the roots of the plants through which their nourishment is received, it also excludes the healthful influence of heat and air. No wet soil, however rich in the organic and inorganic food of plants, can sustain the usually cultivated crops in a healthful and vigorous condition.

Hence, also, all wet lands intended for cultivation should be drained. A system of draining rightly conducted will not only relieve the land of its excess of water, but increase its productive powers vastly, besides rendering it capable of growing superior qualities of produce. The product will be at least one-third greater, while one-third of the expense and labor of tillage will be saved, and the health of the place highly improved.

MILCH COWS.

As the pastures at this season of the year afford but very scant supplies of food for your milch-cows, they should receive generous messes of succulent

food, besides liberal feeds of hay night and morning. And besides this attention to feeding them, they should be provided with warm stabling at night—warmth, generous feeding, and good lodgings being essential to ensure the secretion of milk, and the maintenance of health:—brushing down twice a day, and salting twice a week, and regular supplies of good water at each meal, are among the things necessary to be attended to to keep a cow to the plow.

YOUNG STOCK.

It is important that young animals should be in good condition when brought into their winter quarters, and hence you should feed them of nights.

WORKING ANIMALS.

Working animals of every kind should be attended to with sedulous care and attention; they should be well and regularly fed, comfortably housed, cleanly lodged, curried thrice a day, watered before each meal, and receive salt, or the salt, ashes, and lime mixture twice a week, 2 ozs. each time, to be mixed with their food.

BUCKWHEAT.

Cut your buckwheat before it is touched by the frost. When about one-half the heads are ripe is the time to cut it. After threshing the grain, save the straw for your cattle, as they will need it the coming winter.

SELLING CORN.

Don't sell your corn on the ears; but shell it before disposing of it. By so doing you'll save the freight which you would have to pay for the cob, if you sold it on the cobs, besides the cobs to have ground into meal, which when thus prepared, if mixed with cut straw or hay, makes most excellent food for your cattle—half a peck of cob meal, two quarts of corn meal, and half a bushel of cut hay or straw, make an admirable mess, when brought into slop by the addition of hot water, for a milch cow.

FENCES.

See to the repairing of your fences—see to it yourself, as you may rest assured that the old saw, of a stitch in time saves nine, is just as applicable to one's fences as to his garments.

FALL PLOUGHING.

All stiff clay lands intended for spring cultivation next year, will be greatly improved by fall and winter ploughing, provided they are not plowed when too wet or too dry.

OUT-BUILDINGS AND CELLARS.

If these have not been recently cleaned out and purified, they should be cleaned out and white-washed.

LIMING OF LANDS.

Although we have frequently stated, we are still frequently asked, what quantities of lime should be applied to an acre of land, and as the question has been put to us several times lately, we will restate our opinions in the premises, remarking in the onset, that we hold it to be useful to all lands that have been long in culture without having been treated to a dressing of lime, that lime should be applied to them. Now as to the quantities per acre.

On poor light lands not more than from 20 to 25 bushels per acre should be applied at any one time.

On lands in good heart, from 40 to 50 bushels the proper quantity per acre.

On strong lands rich in vegetable and animal remains, 100 bushels per acre may be advantageously applied.

Of marl twice these quantities per acre may be very profitably applied.

AN ESSAY

On the Analysis of Soils, with a Formula for the same, as founded on the relations between Soils and Plants.

BY CHARLES BICKELL, TH. D.

SUBJECT.

The laws of vegetable life, as well as the phenomena and processes which constitute its nature, are entirely founded on, and supported by, the actions of agents, which under the influence of heat and light, exist in the atmosphere, and in the solid crust of our Globe. Both the air and earth supply plants either directly, or indirectly, with crude nourishment, indispensable for their growth, which they assimilate, and transform into new compounds of organic form and character. In the first case, it is the original constituents of the air and earth which cause development of vegetable life; in the latter, these nourishments are the products of the mutual action of the atmosphere and earth on each other.

The study of the constituents of the air and earth, and their reciprocal action upon each other, must therefore form the natural basis of our knowledge of the formation, and necessary conditions of a soil, which may be favorable to the growth of cultivated plants.

CONSTITUENTS OF THE ATMOSPHERE.—*Oxygen—Nitrogen—Carbonic Acid—Ammonia—Water.*

The constituents of the atmospheric air are *essential*, viz: Oxygen and Nitrogen, which form its main bulk, and remain in a constant proportion to each other; or *accidental*, viz: Carbonic Acid, Ammonia and Water, which must be considered as merely admixtures, with which the atmosphere is supplied from many sources. The quantitative proportions of the latter, depending on local causes, vary; but they are never entirely absent; and they participate in the affairs of nature, with an influence equal to that of the former. There are a few other substances, viz: Sulphuretted, Carburetted, Phosphoretted Hydrogen, Miasma, &c., also diffused through the atmosphere in minute quantities; but they do not seem to exercise a particular influence on vegetable life, and may therefore be here disregarded.

Oxygen, indisputably the most important constituent of the atmosphere, is characterized by its affinity for combustible substances, in consequence of which, it produces those phenomena which, in common language are termed combustion, *cremation*, fermentation, &c. The metals e. g. are combustible substances; and it is owing to this circumstance, that we so seldom find them on the surface of our globe in the metallic state. We find them already burnt or oxidized, viz: in their combination with oxygen, as earthy substances, called Oxides. Substances of organic nature and origin, also become exposed to the influence of the atmospheric oxygen, as soon as the vital powers have ceased to exist in them. Under this influence, they are decomposed, and converted into new substances, which contain Oxygen as a constituent part.

In all these cases, Oxygen is consumed, and as it is furnished by the atmosphere, the quantity contain-

ed in it should become less and less; a conclusion, however, not confirmed by practical experience. Philosophers have, by direct experiment, succeeded in discovering the source from which Oxygen is replaced in the atmosphere, in the same proportion as it is furnished by it to support the processes just mentioned. Their observations have shown, that whilst dead bodies of organic origin absorb Oxygen from the atmosphere, and consequently decay; living plants, on the contrary, separate Oxygen from its combinations, retain and assimilate the substance which was united with Oxygen, and consequently grow and develop themselves. For Carbonic Acid, a product of the combustion of organic matter, consisting of Carbon and Oxygen, becomes decomposed when brought in contact with green leaves, in such a manner, that its carbon is assimilated by them as food, whilst its Oxygen liberated assumes the gaseous form, and is diffused through the atmosphere.

Nitrogen is also a fundamental constituent of the atmosphere, and must likewise be considered as a highly important substance, though it takes no active part in the processes of life. Nitrogen is, as to its properties, the opposite of Oxygen. Whilst the latter has a strong affinity to combine with other substances producing phenomena which have been mentioned before, the former manifests in this respect, such a degree of indifference, that only in rare and local cases, e. g. by the action of electricity, is a direct union of Nitrogen with other substances effected. But to this inactivity which characterizes Nitrogen, its high importance as a constituent of the atmosphere must be attributed. The quantitative proportion in which both Oxygen and Nitrogen form the atmosphere, is by their weight, about 23 per cent. of the former, to 77 per cent. of the latter. Each particle of Oxygen is therefore mixed with about 4 particles of Nitrogen. By this arrangement, a dilution of the pure Oxygen is effected, and consequently its destructive influence upon living and dead bodies diminished, to such an extent, as is in best accordance with the wants of nature.

Carbonic Acid, is the product of the decomposition of organic substances, arising from the combination of Carbon with atmospheric oxygen. All organic substances consist chiefly of Carbon; and therefore when oxidized, produce Carbonic Acid, which escapes in gaseous form, and diffuses itself through the atmosphere.

The functions which this constituent of the atmosphere performs, are of high importance in the economy of nature. It is not alone the chief nourishment of plants, which by separating the Oxygen, appropriate to themselves its Carbon; but in its chemical character, which is that of a weak acid, it is a powerful agent, under the influence of which, as will be seen below, the process of the degradation of rocks and formation of soils is produced. The quantity of Carbonic Acid contained in the atmosphere is not constant—it ranges however between certain limits, and depends on many particular circumstances; e. g. on the season of the year, on the time of the day, on the locality, on the weather, &c.

Ammonia, a substance composed of Hydrogen and Nitrogen, is also a product of the decomposition of organic bodies (which contain Nitrogen;) and for this reason is likewise diffused through the atmosphere, of which it makes a constituent; and to it we must also ascribe important functions, though its quantity is comparatively very small.—

Experiments expressly made to ascertain its importance, have shown that plants can live and develop themselves without having any other source capable of furnishing them with Nitrogen, but the Ammonia contained in the atmosphere; and if practical experience has shown that a rational husbandman should not always rely on this supply of Nitrogen, the result of the experiments just mentioned nevertheless teaches us a fact which throws sufficient light on the high importance of this substance.

Water is, in the form of gas and vapor, another constituent of the atmosphere of which it forms about one per cent. of its volume. Its quantity however, varies very much on account of circumstances which have been noticed already, when speaking of Carbonic Acid. It originates in exhalations from the surface of our globe, and is dissolved by the atmosphere in form of a gas, the specific gravity of which is much lighter than that of the atmosphere itself. For this reason, it goes up to a certain height, where it is collected and finally condensed to water (clouds), which, when heavy, falls down (as rain) to its original place, the surface of our globe. Rain-water contains in solution small quantities of all the constituents of the atmosphere. Their quantitative proportion differs however from that in which they exist in the air, and is characterized by a more predominant quantity of Oxygen and Carbonic Acid.

THE CONSTITUENTS OF THE EARTH.—*Earthy masses—Rocks with crystalline texture.*

The solid crust of our globe is composed either of *earthy masses*, more or less loose and friable, or of hard and compact *rocks with crystalline texture*. The former are called *aqueous rocks*; are the most extensive, at least in the horizontal direction; and were precipitated from their solution, or suspension in water, in the form of plainly visible parallel layers, called *strata*. They may be classed as follows:

<i>Calcareous Rocks and Salts.</i>	<i>Broken Masses.</i>
Limestone,	Sand-stone,
Dolomite,	Clay,
Anhydrite,	Calcareous Conglomerations,
	Braccia,
Gypsum,	Tufa,
Rock Salt,	<i>Organic Rocks.</i>
	Coal.

The latter are called *volcanic rocks*, are of igneous origin, produced by the action of subterranean heat, and form massive blocks, especially extending in the vertical direction, and without any regularity in the arrangement of their particles. They very probably existed once in a fused state, forming a liquid and homogeneous mass, from which, on cooling, such constituents were separated, as had the greatest tendency to crystallize, whereby the entire mass assumed a peculiar crystalline texture. The various crystalline rocks can best be classed as follows:

<i>Silicates, containing Alumina & Alkalies.</i>	<i>Silicates, containing Lime and Protoxide of Iron.</i>
Granite,	Hyperit,
Gneiss,	Gabbro,
Granulite,	Syenite,
Mica-Slate,	Diorite,
Felsparphophrite,	Melaphyrite,
Phonolite,	Dolerite,
Trachyte,	Basalt,
Obsidian,	Leucitopyrite.

ACTION OF THE ATMOSPHERE ON EARTH.—*Mechanical Influences—Chemical Influences.*

Geology teaches us that there was a time when no plants were developed upon our globe; when neither soils nor any friable masses of earth existed; at that time the entire crust of our globe consisted solely of those hard and compact rocks of a crystalline texture, which have just been named. These crystalline rocks have, therefore furnished, the material for all the immense masses, which in parallel layers now cover the surface of our globe, and more particularly the material for that portion of the earth which forms the soil,—its outer crust. The study of the influences to which, during thousands of years, these crystalline rocks were exposed, and in consequence of which they became loose and friable, and were converted into new forms of various character, capable of supporting vegetable life, must therefore form the natural basis for understanding in what manner the wants of plants depend on the soil, as also the manner in which those wants may be supplied.

The degradation of rocks,—a term applied to the natural changes they undergo,—takes place under the double influence of mechanical power, and chemical affinity.

The commencement of this process manifests itself in the formation of small clefts and fissures, which extend through the body of the rocks, a phenomenon the consequence of changes in their temperature. We know that all substances, without exception, are expanded under the influence of heat, and contracted again by cooling; the degree of this expansion is however not the same in different substances submitted to the same temperature. The crystalline rocks, of which alone we here speak, are always an aggregation of different minerals. Changes in the temperature to which they are periodically exposed, consequently effect an unequal expansion, or contraction, of these different constituent minerals; besides this, the surface of the rock is more directly warmed, or cooled, and therefore more expanded, or contracted, than the interior. The consequence of these influences is the production of small clefts, or fissures, which originating on the surface, gradually extend themselves towards the centre, and thus weaken the cohesion of the whole mass.

To the effects of heat on solid masses, we must also add, those occasioned by water. The property inherent in water, to occupy a larger space when frozen, than in the liquid state, aids materially, the preceding influences in destroying the cohesion of rocks. It is a well known fact, that this increase of the bulk of water when frozen, is able to overcome any resistance, however great, which may oppose it. In Autumn, the season in which rains usually fall, we find mountainous countries very moist; the caverns and fissures of the rocks filled with water, which gradually leaks through the smaller clefts, percolates through the pores, and finally, pervades every part of the rock. The enclosed water converted by the first frost into ice, expands and bursts the rocks, which oppose its expansion, and by these means aids materially in their comminution.

Besides, water, when falling to the earth in the form of rain, and running from mountainous regions to level countries, and also air, by its weight, when in motion, act mechanically on rocks, and materially contribute to their degradation.

But all of these mechanical influences which act

on solid rocks, powerful as they are, and as great a share they take in their destruction, would not have been able to effect such changes by themselves as have taken place, and as were necessary to render the surface of our globe fit for the support of vegetable life. Everything which happens in nature is based upon endless and mutual actions; no process whatever stands isolated; its whole economy must be understood before even the most simple phenomena in all their conditions and consequences can be explained—so in this instance. The mechanical powers are not the only causes of the degradation of rocks; these are accompanied and assisted by chemical affinity, the activity of which is due to the following facts:

A piece of granite protected against all mechanical influences which could destroy it, would nevertheless lose its cohesion, and finally become changed into a white powder, commencing at the surface, and gradually extending to the centre of the stone. This change is due to the influence which the constituents of the atmosphere, most especially, Oxygen, Carbonic Acid, and Water, exercise upon solid rocks. The different crystalline rocks are composed of only a limited number of single minerals, which by the different manner of their association, as well as by the different quantitative proportions in which they are united, produce the various forms above named. These single minerals are: Quartz, Mica, Felspar, Augite and Hornblende, of which the three first, in their various combinations, form the first class of crystalline rocks, headed: Silicates, containing Alumina and Alkalies. The three latter, on the other side, form the second class of crystalline rocks, headed: Silicates, containing Lime and Protoxide of Iron.

Granite, is the representative of the first class, and an investigation of the causes which lead to its degradation, is sufficient to explain those which effect that of all others of this class. Granite consists of Quartz, Felspar and Mica, of which only the two latter are subject to the influence of the atmosphere. Quartz is a form of Silicic acid, a substance which presents itself in two different modifications. In the one, its pure state, it is isolated, forming Quartz, which is in no way attacked by the atmosphere, and only liable to crumble to pieces, under the influence of mechanical powers. When thus broken, it gave rise originally, and still adds to the immense deposits of Sandstone, which we meet almost everywhere on the surface of the earth. In its other modification, it forms with Alumina and the Alkalies, Felspar and Mica, and in these it exists in chemical combination, forming a Silicate of Alumina and Potash, a substance which is subject to the influence of the atmosphere. In contact with the Carbonic Acid and the water of the air, it is so decomposed, that Carbonate of Potash, and an Acid Silicate of Potash are formed, both soluble in water. If these products are washed out by water, nothing will remain, but Silicate of Alumina, a substance which, when pure, is of a white color, and known by the name of Kaolin; in its impure state however, it is colored, and accompanied by Lime, Sand, Oxides of Iron, &c., forming the various kinds of Clay.

A knowledge of the composition of Granite therefore, explains to us the origin and formation of two massy deposits: Sandstone and Clay, which almost everywhere cover, and often extend to thousands of feet below the surface of the globe, and which also form the fundamental constituents of the soil.

The second class of crystalline rocks, headed: Silicates, containing Lime and Protoxide of Iron, consists either of rocks containing Felspar, associated with Hornblende, or Felspar associated with Augite; and their degradation under the influence of the atmosphere, is especially due to the influence of the atmospheric Oxygen, on Protoxide of Iron. Hornblende, as well as Augite, contains Protoxide of Iron, a substance to which both minerals owe their dark and somewhat green color, and which greedily attracts oxygen from the air, in order to procure for itself a higher degree of oxidation—that of the Peroxide of Iron. The immediate consequence of this change, is the formation of new combinations, which produce an alteration in the position of the atoms, (the smallest parts of the rocks); so that the original solidity of the rocks is diminished, and a continued crumbling into small pieces, and in the course of time a complete disunion of them takes place. Common Copperas also contains the Protoxide of Iron, and exposed to the influence of the air, is modified in an analogous manner.

If Sulphurets (combinations of Metals with Sulphur,) occur in crystalline rocks, which is frequently the case, the degradation of them takes place still more readily, inasmuch as these ingredients also absorb Oxygen, and become transformed into Sulphates, soluble in water.

The capacity then, of the crystalline rocks for decomposition, is in proportion to the quantity of Silicate of Potash they contain, and also of such other substances as absorb Oxygen, and in this way have a change of their chemical composition. We always find that the larger the quantity of these substances, the more quickly and thoroughly is the exposed rock decomposed.

FORMATION AND CONSTITUENTS OF THE SOIL.

We have thus represented to us in a sensible form, the influence by which the gradual degradation of the primitive crystalline rocks was effected; and also the consequences of this process, which gave rise to the formation of new masses, of an earthy and friable character, permeable to the roots of plants, and thereby rendering them their necessary mechanical support. We find these masses, either in their original place, still covering the crystalline rocks by the degradation of which they were formed, or, as aqueous formations of different periods and ages, appearing in distant regions, throughout the surface of our globe, to which they were conveyed by rivers and streams, or by mighty floods, as they occurred in former ages.

The soil (the upper portion of these masses,) consists, according to the above, of Quartz-Sand; of smaller or larger fragments of rocks which still remain undecomposed; and of Clay, impregnated with Silicates of Potash and Soda, Lime, Magnesia, Oxides of Iron, &c. A fertile soil, however, requires besides these ingredients, comparatively small quantities of some other substances, viz: such as contain Phosphoric Acid, Sulphuric Acid, and Chlorine, the origin of each of which is also easily explained. For Phosphoric Acid, is the constituent of Apatite, (Phosphate of Lime)—a mineral which, though in small quantities, is diffused through almost all rocks of all ages, and consequently carried along with the products of their degradation. Sulphuric Acid originates from Sul-

phurets, combinations of metals with sulphur, which also are more generally diffused through rocks, and which, under the influence of the atmospheric Oxygen, are converted into the sulphates of the corresponding metals, as already explained. Chlorine, in its combination with Soda, (common Salt,) we meet in abundance in Sea-water; in the waters of fountains, and also in small quantities in rain-water.

Another substance which is never absent in cultivated soils, is Humus. It has already been mentioned, that after death, the constituents of organic bodies (the organs,) become exposed to the destroying influences of the atmosphere, which finally converts them into Water, Carbonic Acid and Ammonia. In the mean time, between death and total conversion into these three constituents of the atmosphere, the remaining organic parts run through many phases of decomposition, and in this period form the so called Humus; a substance, which therefore in every moment changes its composition. With every new crop we take from our soils, we also supply them with new quantities of Humus, which originate from those parts of the plants that remain upon the soil. For this reason, a soil cannot become poorer in Humus though its quantity is constantly diminished by decomposition.

THE CONSTITUENTS OF PLANTS, AND THE FORMS IN WHICH THEY ARE ASSIMILATED.

A plant, or any part of it, when heated to a proper degree of heat in the open air, burns, and produces volatile substances, which in gaseous form are diffused through the atmosphere, whilst only a comparatively small part of the original plant remains as an incombustible, earthy substance, called the ash.

Far the greatest part of the plant produces the volatile matter, consisting of Carbonic Acid, Water and Ammonia, three substances which can be farther divided into their elementary constituents: Carbon, Hydrogen, Nitrogen and Oxygen.

These single substances, are the fundamental constituents of all organic bodies; and plants must therefore be constantly supplied with them whilst the processes of life continue to take place in them.

Animals live on both vegetable and animal food, and are consequently referred to, and supported by the vegetable kingdom; they could not exist before vegetation covered the lifeless mineral crust of our globe. Plants, on the other hand, must necessarily assign to themselves food of far more simple constitution. When they first made their appearance, they did not find anything else offered to them for food, but what already existed as constituent parts of the atmosphere, and earth.

In accordance with this, our daily experience teaches us, that the wants of plants are supplied by both these media, viz: that the forms in which the plants assimilate their Carbon, Hydrogen, Nitrogen and Oxygen, are those of Carbonic Acid, Water and Ammonia, contained in, and furnished by, the air; and that, on the other hand, the forms in which the plants assimilate the constituents of their ashes, are those of Silicates, Phosphates, Sulphates, Chlorides, alkaline, and earthy salts, as contained in, and furnished by, the soil.

The latter position cannot be doubted;—no other source exists for the supply of mineral substances, but the earth. As to the former however, that Carbonic Acid, Water and

Ammonia, are the only forms which supply the organic constituents of plants, it has been often opposed, and is still opposed by many at the present day. It is a fact, that the productiveness of soils is somewhat influenced by the quantity of Humus contained in them, and accordingly the principal objection made against our theory is this, viz: that Humus is assimilated by the plants in form of Humus, and thus participates directly in the formation of the organic part of plants, or, in other words, plants live on organized bodies.

We have no reason to adopt a theory which is not only strongly opposed to natural philosophy, but which is also positively contradicted by facts. We see plants growing and becoming developed in a soil which neither contains Humus, nor any substance of organic origin. This occurs in many parts of our globe, and is also confirmed by direct experiments upon soils which, before being used, had been calcined, and thus deprived of all organic matter.

On the other side, the plant is not able to appropriate to itself and to assimilate its constituents, in their isolated, elementary form; for a plant which is planted in pure charcoal, and surrounded by an atmosphere of Hydrogen, Nitrogen and Oxygen, will soon die for want of suitable nourishment.

For these reasons we are compelled to seek for the nourishment of plants in the contents of the atmosphere; and as Oxygen and Nitrogen cannot add to the weight of organic bodies in their isolated form, these functions must be solely fulfilled by Carbonic Acid, Ammonia and Water. If we abstract from Humus its action on the mechanical texture of soils, its beneficial influence on vegetation is then due, to its giving rise to Carbonic Acid, Ammonia and Water, and to no other cause.

It has already been shown, that Carbonic Acid, Ammonia and Water, are the products of the decomposition of organic substances; and we have seen that they are also assimilated by plants as nourishment, and their elements, under the dominion of the vital powers, arranged to form new compounds of organic character. The same substances which have served to produce the plant, are thus regenerated after its death by the process of its decay, thus forming an eternal transition from the organic state, to the inorganic.

The inorganic, or mineral, constituents of plants, though small in quantity when compared with the organic part, are nevertheless essential, and must be considered just as indispensable for their growth as are Carbonic Acid, Ammonia and Water. For the proof of this, it is only necessary to let experiments speak. The results of observations made by the Prince of Salm-Horstmar in this matter, are especially interesting, and have established the following facts: In a mixture containing all the various substances requisite for the nourishment of plants, except Silicic Acid, Oat plants remained low, pale and dwarfish; without Lime, they died after the second leaf; without Potash and Soda, they reached only a height of three inches; without Magnesia, they remained weak and lying down; without Phosphoric or Sulphuric Acid, very weak and without fruit, but upright and of normal formation; without Iron, they remained very pale, weak and badly formed; and without Manganese, they did not reach their full strength, and showed but a few flowers. Soda could not represent Potash in relation to the strength of the plants; Magnesia could not represent Lime.—

When, however, all of the mineral substances which vegetable life requires, were present in their proper proportion, and in sufficient quantity, the oat plants reached a complete and pretty luxuriant development, even with an entire absence of Humus, or any vegetable substance in the experimental mixture.

THE RELATIONS WHICH EXIST BETWEEN PLANTS AND THE SOIL, AND THE MANNER IN WHICH THESE RELATIONS INFLUENCE THE GREATER OR LESS FERTILITY OF THE SOIL.

In the preceding chapter we gave a knowledge of the soil, as far as it embraces its origin, and its consequent composition; we gave farther, the principles upon which the nutrition of plants is based; all that is now left for our consideration is an enquiry into the relations which exist between plants and the soil, and in what manner these relations influence the productiveness of a soil for plants which may be cultivated upon it. These considerations may lead to the sure foundation of a useful, and thoroughly practical classification of soils, a knowledge, from which we are yet distant, which, however, it may be confidently hoped, will one day be reached by the united co-operation of practical farmers and chemists.

The soil consists substantially of two parts, of which the one constitutes almost its entire bulk, and through which we find the other, in small quantities, uniformly divided and diffused. The soil can be defined as the medium of the processes of vegetable life, and both of its parts, unequal as they are in their quantity, take nevertheless an equally important share in this function.

We have before observed, that the bulk of plants consists of substances of organic form, composed of Carbon, Hydrogen, Nitrogen, and Oxygen, whilst only a small part of their constituents belongs to the mineral kingdom. This fact, compared with the composition of soils, will enable us to throw a light on the profound and wise manner, in which nature has transferred the mediation of the processes of vegetable life to the soil.

We find that the constituents of the bulk of the soil, do not directly participate in the nutrition of plants; that none of them is carried away by a crop, and their quantity therefore not diminished; but that the small quantities of substances which from the other part of fertile soils, and which are diffused through the bulk of the former, serve as nourishment for plants, and consequently diminish in soils by being cropped and carried away from them.

The functions which this latter part exercise on the mediation of the processes of life, consist therefore, in supplying the plants with their necessary mineral constituents, and are perfectly and plainly understood.

The functions of the main part of soils therefore remain only to be considered, and we may judge a priori, that this part,—if we abstract from it, its utility as a mass easily penetrated by the roots of plants, and thus capable of rendering them the necessary mechanical support,—is that, which we have especially to assign as the medium of communication between the atmosphere and plants, and which therefore supplies them with Water, Carbonic Acid and Ammonia; for though the plants are in direct contact with the atmosphere, and, to a large extent, directly nourished from it by means of their leaves; they nevertheless depend, to the

same extent, on the constituents of the atmosphere which, through their roots, enter their system. In the first period of their growth, e. g. they are solely referred to this latter manner of nutrition. These nourishments are therefore supplied to the roots, either by the air, (in its gaseous form as contained in the soil, or dissolved in rain-water, which falls on the earth and penetrates the soil;) or supplied by Humus in a manner as already explained.

These considerations must necessarily lead us to the conclusion, that the nourishing properties of the soil also depend on its mechanical texture; for it is the particular kind of mechanical texture which causes a more or less perfect communication between the constituents of the atmosphere and the roots of plants, and which consequently furnishes a more or less perfect supply of Water, Carbonic Acid and Ammonia; and that therefore the fertility of soils is due to two factors: to mechanical texture, and to directly nourishing properties.

It has already been mentioned, that the bulk of soils consist of quartz-sand (including the fragments of undecomposed rocks,) and Clay; the latter being accompanied by smaller or larger quantities of Lime, Magnesia and Humus. On the different character, as well as on the respective quantitative proportions of these fundamental ingredients of soils, depends therefore the fitness of their mechanical texture for supporting vegetable life, viz: this is due:—to its water retaining power; to its consistency in the wet and dry state; to its capacity to dry up more or less quickly; to its consequent contraction of volume, which gives rise to clefts and fissures tearing the roots; to the capacity to attract moisture from the atmosphere; the capacity of absorbing the atmospheric ingredients; to its power to warm itself and to retain the heat, &c.

Among the constituents of the soil, Sand has the greatest specific gravity, and forms therefore the heaviest part in soils; it has almost no water retaining power; it gives consistency to soils only when in its finest state, and wet; it loses its moisture very quickly; it does not contract in volume by drying, nor does it attract moisture, or gases from the atmosphere, to any extent; and it has lastly, the greatest capacity of keeping heat.

The same is true of the fragments of undecomposed rocks which accompany the sand.

Clay, in its pure state, shows itself more or less in all these properties, as the opposite of Quartz-sand.

Humus aids in the water-retaining power of soils like Clay, without increasing however their consistency. The more a soil contains of Humus, the more clay it can contain, without becoming stiff and difficult to be ploughed. Humus farther prevents the rapid drying of soils, assists in attracting moisture and oxygen, also in keeping a constant temperature.

Lime and Magnesia take their place between Sand and Clay, aiding or tempering the properties of the one or the other.

In nature, we find these substances as constituents of soils, associated in such a manner, that we have on one side Quartz-sand, and the fragments of undecomposed rocks; and on the other, Clay, Lime, Magnesia and Humus, forming a kind of Cement, which envelops and connects the Quartz-sand particles, and is itself again loosened them.

[To be concluded in our next.]

CORRESPONDENCE.

REAPERS—CROPS—RAIL ROADS.

HAREWOOD, 8 mo. 20, '55.

To the Editors of the American Farmer:

You may perhaps recollect that some fifteen months since, while giving you a description of my mode of cutting and cleaning clover seed, I incidentally referred to efforts then making to construct an automaton, or self-raker for the Reaping machine. The opinion was expressed that it would be perfected, both efficiently and economically; thus bringing it within the means of small farmers, who grow from 20 to 30 acres of wheat.

It is the invention of Owen Dorsey, of Howard county, Maryland, and is attached to Hussey's Reaper, with some modification in the general arrangement, to adapt this valuable improvement to it. I hope he may meet with a reward for his perseverance and skill, commensurate with the advantage it will prove to the farmer; for where there is one large grain grower who can command an ample supply of hands during harvest, there are probably fifty others on a smaller scale, to whom a single hand detached from the raking, and added to the binding, is important.

The rake delivers the grain at the side, with more uniformity, and in better order for binding than is usual with even expert rakers, and with less waste. I witnessed the operation in two fields, sufficient to satisfy my mind of the success of the invention. One peculiar advantage of this rake is, that it is thrown quite in advance of the cutters—entirely superceding the reel—and more efficiently gathering in the grain, whether tangled or straight, than is done by the reel, which is so essential in the estimation of some. This addition to the Hussey Reaper need not cost over \$20 to \$25, when built with the Reaper; and for this sum can be made both efficient and durable. The rake can be detached in a few minutes, and its place supplied by a seat and hand rake, if at any time desirable. The plan is quite different in principle from any device for the purpose that I have seen; it is possible, however, that in the hundreds of attempts made in Europe and America within the past century, to render this great labor-saving implement practically useful, some similarity may be discovered not only to this, but to the more important parts of the Reaper—the cutting apparatus. But it is unquestionably true, that until Hussey's invention and patent in 1833, no efficient and practically useful machine for reaping and mowing had ever been made and introduced into use in either country.

The slotted guard, combined with vibrating cutters, as first made by him, was the first successful machine. It has maintained its supremacy from that day to this; and every other reaper and mower that can now compete with it, is indebted mainly, if not entirely, to these necessary features. At least I have seen no machine that gave satisfaction, or worked even tolerably well without this principle in the cutters; nor have I been able to discover, after much research among the archives of this country and Great Britain, that a single inventor was successful prior to 1833; and indeed it may be said much prior to 1843, when Hussey's Reaper had worked most successfully every year for ten years.

If on a more extended scale this invention of the rake proves to be all that it promises—and I

am satisfied the same thing has not been successfully and previously introduced,—I shall hail it as a most valuable addition to one of the greatest inventions of the age; it will benefit all classes, because it tends to cheapen our food, by lessening the labor that procures it.

As regards another subject that more recently claimed our attention, viz: the crops, price of breadstuffs; &c., and on which you request my opinion, I may remark, that since harvest, and with a view to be relieved for a time from the engrossing cares of business, I have travelled between two and three thousand miles; into a number of the eastern counties of Virginia, through Maryland, Western Virginia, Ohio, Western Pennsylvania, Western New York, and into Canada.

From my own observations, and through intelligent persons in the different sections passed through, I am inclined to the opinion that the wonderfully heavy crops of wheat we read of, grew in other sections than those seen by me. Nor could I learn satisfactorily, as a general thing, that there was a much greater breadth of land sown last fall than usual. I met with quite as many who seeded rather less than usual, owing to the dry weather and difficulty of preparing the ground in season, than with those who had materially increased their operations.

In Eastern Virginia, so far as I saw the crops in some six or eight counties, or had reliable information from adjacent counties, including Loudoun, Frederick, Berkeley, Clarke, Shenandoah, and Rockingham counties, some of the finest wheat districts in the State, the wheat crop was rather light; not considered by many an average one. Where one good crop was seen—and it was very generally standing in shock—there were many inferior; and I saw a number of fields where only portions of the wheat were considered worth the labor and expense of harvesting. The hard winter, dry spring, the fly and joint worm, either singly or combined, had effectually blighted the hopes of many farmers. With an occasional good crop, oats and grass of the early harvest were light; the latter very generally so. The Corn crop was as generally promising.

In my own section, I do not think the wheat crop is more than an average, if so much; the quality is good. The same may be said of at least portions of Baltimore, Frederick and Washington counties so far as I had opportunities of judging; though occasionally the standing shocks indicated a heavy crop. In some of the best districts in Baltimore county where I have usually seen fine crops of wheat and full hay houses, I was informed that the former is rather under than over an average crop, and the grass crop generally much under an average one.

Approaching the mountains showed an improvement in grass—corn and oats in this region were very good.

Through the mountains and in Western Virginia, these crops are considered full an average, if not rather more. Most of it is a rich productive soil, and ought to produce annually fine crops, if well farmed. Many of the farms are so mountainous that the crops can only be removed by *sledding* them; wheels cannot traverse many of the fields, and they can only be plowed to advantage by reversing the furrows on the sides of these steep mountain slopes; to plow up or down, or round the rugged mountain, appeared to be equally

out of the question on many of the fields in view from the Railroad, but that they can be most successfully cultivated is clearly demonstrated.

Leaving the mountains, the face of the country bordering on Grave and Wheeling Creeks, presents a landscape of great beauty, and fine crops of all kinds; though both here and in the mountains, much complaint was made of loss to the wheat caused by continued and heavy rains. In Wheeling Creek Valley, during a short excursion from the town, I saw as heavy a crop of hay—and near by, equally as good a crop of wheat—as can be grown any where; the Corn on the creek bottoms was of “the same sort,” though limited in extent. From Bellaire, the eastern terminus of the Central Ohio Railroad, through Barnesville, Zanesville, Newark, &c., the country presents a fine appearance, and very different from what it did thirty-eight years ago, when I traversed the State on horseback in all directions. Where I then rode fifteen miles without seeing more than a single cabin in the Northwestern part of the State, is now almost a village the whole distance; and where I found it laborious travelling twenty to twenty-five miles a day through the narrow and miry roads in the beech woods, the “Iron horse” now dashes you along the same distance in half an hour.

As you may suppose, and as every one knows who has visited this region of late years, the crops show a good soil and good farming generally. The oat crop is almost every where west of the mountains an unusually heavy one; often much fallen, and in many places was being cut with the sickle. With a good reaper, and some experience in its use, any of the crops that I saw, (the mountain crops excepted,) could have been saved quite as well, and in less time than dozens of sickles could do it. East of Zanesville, considerable tobacco is now grown; and in those sections I noticed some as poor corn as was wont to be seen in our most impoverished districts. I presume, however, it is less owing to lack of fertility in the soil, than to a cold backward spring and neglect of proper culture; neglecting the necessities of life, for the luxuries. West of Zanesville, and especially bordering on the Muskingum, in the valleys of Licking Creek, the Sciota and Miamies, the country is a very Egypt in fertility—almost rivalling the Nile itself. There is certainly no lack of corn, corn wine, or oil. But oh! the water: it is a villainous compound, from either the mineral, vegetable or animal kingdoms, often all three combined, and may be good for any purpose but to drink. I never saw finer corn or oats; the wheat crop here was considered a full average; and indeed more, by many persons; but there was much complaint as to injury from heavy and long continued rains. Forty to sixty miles distant and near the N. W. Reserve, I was informed that it rained every day for three weeks, during harvest. I believe it rained more or less nearly every day during the eight or nine days I was in the State, and sometimes poured down in torrents. Much of the wheat sprouted in the sheeks, and no little as it stood in the fields uncut. One of their large farmers had estimated his loss at a thousand dollars—he cultivated four or five farms; but after examining portions of his crop, I thought it much overrated—full one half, if not three fourths—though the injury was material.

Much of this loss was caused by lack of hands

to cut and secure the crops in due season. When good reapers are introduced—now almost unknown there except by name—three or four times the work can be done in the same time by the same hands, by a few neighbors clubbing together and joining their forces. If the opportunity offered, I would also say to the farmers there, that this is not *theory* but *practice*. As I could not in time procure hands for my hay harvest this season, I mounted my “Hussey machine” myself, and with a span of horses, cut my crop—about thirty acres—with no other aid than a boy to wait on me, oil the machine, &c.; the machine clearing its own track, and spreading the cut grass as evenly as it stood on the ground. The cutting time was but little over two days, and I suppose about equal to the work of some ten or a dozen hands, as a portion of the grass was heavy and much lodged. Now what an old man of over three score years can do, surely the young and hale might accomplish equally well or better. On the 10th instant (August) I observed considerable wheat, and a vast quantity of hay and oats still standing, between Columbus and Buffalo; full two to three weeks later than usual.

The Northwestern section of Ohio and the “Lake shore country” for several hundred miles, is a fine grazing country; it is very level and yields great crops of oats and grass annually. The fields of timothy on the Lake shore were as yellow and bright as our wheat fields when ready for the harvest. Owing to the soil or climate, perhaps both, the hay is much brighter than ours, notwithstanding the remarkably wet season. On the higher and drier portions are good wheat crops; but generally speaking the corn crop was light on the level beech lands. It was mostly planted late this season—the soil too wet to plant early, or to cultivate properly. I saw many fields of corn in a day’s travel of three to four hundred miles, apparently abandoned, to grow or perish as the case might be, without benefit of plow or cultivator.

The “Lake shore” is a beautiful farming country. From Cleveland to Buffalo—or indeed to the Falls of Niagara, a distance of over 200 miles, the country is comparatively as level as a floor; the whole distance, the railroad is located on the shore of Lake Erie, varying in width from the water to the bluffs, from one to five miles, or perhaps more at some points. Every farm house and almost every field presented the appearance of thrift and good management—neat dwellings and out buildings, painted or white-washed. In a few instances in Ohio, bordering on the Lake, could be seen yet standing, the primitive “log cabin” of the early settler with its puncheon roof, doors, and floors; but all had given place as dwellings to the snug farm house or gothic cottage.

I believe the whole line from Cincinnati to Buffalo, or to the Falls—a distance of four hundred and sixty-three miles, is fenced in through forest and field; is nearly level all the way, and has but few curves. Look back or ahead when I would, the view of the track was only closed by the distance; consequently the “Iron horse” often travels with a loose rein. At Columbus I observed a new device—at least quite new to me—to save fuel and more rapidly generate steam on our locomotive; the waste or surplus steam is forced into the tank of the tender as filled with cold water, and during the very brief stoppage of the train, the water is heated to nearly the boiling point. At one of my

examinations, I met the engineer—a sociable pleasant fellow—oil his journals, and remarked that he *drove his team* at a rapid pace; he replied they were behind time; (this I knew, having a time table, and I also knew that we had been *jogging along* at the rate of 35 to 40 miles an hour running time,) and added rather significantly, “but I am going to travel after a spell, and you can time the running from such a station”—distance 25 miles by table. The actual time made for the 25 miles was 28 minutes and 13 seconds; several miles of the distance were made in from 58 to 64 seconds each; and thus nearly half an hour lost time is made up at the risk of life to passengers. The shrill scream of the whistle to “clear the track,” was scarcely heard a mile ahead, before we passed a station or crossing like a whirlwind, leaving nothing visible behind but clouds of dust and smoke; and persons standing on the platform or near the track, were scarcely discernable as we passed them. Two trains passing each other at the rate of 30 miles an hour, will give a correct idea and *feeling* of one going at the rate of 55 or 60 miles, and passing stationary objects.

This rate of going through the world—a mile a minute—may suit “Young America,” with a long life in prospect, and the world before him; but “Old Foggies” are usually content to move a little more slowly. Should an axle break, or a wheel fly to pieces—to say nothing of collisions—what becomes of the passengers? Where are you?*

But “go ahead” is the order of the day; and doubtless if a company was started to travel 80 or 100 miles an hour, and not more than about one to 4 or 5 per cent. of the passengers were maimed for life or killed outright, some could be found foolhardy enough to patronize such a break-neck concern. Just previous to my visit, I learned from reliable authority, that a *race* came off between two trains on rival roads in the West, that ran nearly parallel for many miles. One train *waited* for the other to come up, when they started at full speed, and actually ran 20 miles in 19 minutes! The passengers were loud in denunciation for a time; but as no accident happened—no unlucky cow crossed the track, no axle broke, or wheel gave way—nothing more was said, or done. Ought such men to be entrusted as Conductors and Engineers, with the lives of hundreds of passengers, who thus recklessly sport with the safety and life of others? They are but a shade less criminal than the miscreant who would vent his spite against the Company by tearing up the road or obstructing the track. The award of a coroner’s Jury, or damages in Court, is poor compensation or satisfaction to survivors, who have lost all they held most dear on earth. If Rail Road Companies will not, or cannot better regulate these things, legislative enactments, with the most stringent provisions should, and could do it.

As this is an unexpected digression, I will trespass a little further by saying, that after travelling over various lines of Rail-roads, I consider

*I was forcibly reminded of the reported reply of Brunel, the great civil engineer, to the queries of a committee of Parliament:—“Whether there was any more danger in travelling 90 miles an hour, than 60 or 70?” No: “Was there any more risk in 60 or 70 than 45 or 50?” “No, for if a collision occurred they would all go to the d——l in either case.” This however might depend on circumstances and character of the passengers.

the B. & O. R. R. decidedly the best in construction, the best managed, and having the most obliging and efficient Conductors. As an evidence of this, it may be stated, that I procured a time table in Baltimore on leaving for the West, and set my watch to R. R. time. In 232 miles (my first day’s travel, “laying over” before night) there were 44 stations; and at none of them was the train a single minute behind time.

The Central Ohio R. R. which connects at Bell-air, appears to be under equally good management; though as the Eastern portion of the road is newly made and graded, it is not, nor can it be expected to be in as good working order at all points. It is under efficient Agents and attentive Conductors, who appear desirous to make the traveller as comfortable as possible. Quite on a par with good roads, I would place the “Sprigg House,” at Wheeling. The traveller will be sure to meet with most accommodating hosts, a first rate table, clean beds, airy rooms, attentive servants, and reasonable charges; all of which the weary traveller can fully appreciate.

My letter is far exceeding its prescribed limits, and I will close it with a brief notice of this great work, the Baltimore and Ohio Rail Road; one of the grandest triumphs of genius and perseverance in the world. It required men of almost iron nerves to *undertake* the task, much less to accomplish the work, of cutting down, and boring through the mountains from one-fourth to seven-eighths of a mile in extent; and literally, not figuratively, traversing them with more than the speed of the fleetest courser. How an accurate survey was ever effected, winding round and up the precipitous rocky mountain slopes as the road does, ascending a grade often cut through the solid rock, of within a fraction of two thousand feet in seventeen miles, where only the panther, the wild cat, or bird was wont to pass, is a question that instinctively presents to the mind of every beholder.

The scenery at many points is truly grand and imposing; but no where else equal to the wild gorges and alpine peaks through and between which Cheat River flows. On one side is a precipice of three to five hundred feet, and apparently a pebble could be tossed from the cars into the abyss below; on the other side, and equally precipitous, the mountain towers above you, till forest trees appear to dwindle to the size of bushes, and its top is often seen above the mists of the morning.

No brief description can convey an adequate idea of the magnitude of the undertaking, the wildness and beauty of the scenery, and the skill which has so successfully overcome difficulties that appear at first view as absolute impossibilities; but “seeing is believing.” The work is an enduring monument to the energy and perseverance of our fellow citizens;—and it is as useful as it is enduring—by uniting the East and the West with iron bands, of brotherhood and social intercourse, in Commerce and in Agriculture.

But I must forbear; as I have not the time to spare to enter into detail of the many other objects of quite equal interest to me. I must omit all reference to what may be justly considered the wonder of the world—the Falls of Niagara; for no description, however well written, can even approach giving an adequate idea of its grandeur and sublimity. Next in interest to me, was the Wire Suspension Bridge over the Niagara River; with a span of eight hundred feet, and two hundred and fifty feet above the foaming and unfath-

omable torrent below, carriages are constantly passing and repassing, with locomotives and full trains of passenger and burden cars rumbling over head, as they pass from shore to shore. There is no sensible vibration: and from careful observation, I found that the depression from a horizontal line by this immense weight passing over the bridge, was scarcely perceptible.

Owing to continued indisposition from the time I entered Ohio until my return to the mountains, my trip was shortened about one half, and only permitted a short excursion into Canada. It was too limited to form any opinion of how much wheat the Canadians can supply as under the reciprocity treaty. So far as I could judge from personal observation, and the report of those on whom I could rely, the wheat crop in New York is certainly not more, if an average one.

This opinion was expressed by four practical farmers personally known to me, who have recently travelled through the best wheat producing districts in the State—from the extreme of Long Island, (where one resided,) to the Falls of Niagara;—all travelling separately, and by different routes. The wheat crop in many sections of the country was so much better than was anticipated early in the Spring—an almost total failure was at one time expected by many,—that a greater yield is now calculated on than I fear will be realized. It may prove an average one; but from all the evidence in my possession, I do not think it can be more.

Examine into the statistics of the last census, and take the product of all the States and Territories in the Union, which is stated in round numbers at less than one hundred million five hundred thousand bushels of wheat—the maximum of the preceding half century.

Four States, Pennsylvania, Ohio, New York, and Virginia—named in the ratio of product—produced more than half of all the wheat grown, by some four to five millions of bushels. I have seen it gravely stated, and going the rounds of the papers, that this year the crop will exceed an ordinary average by some fifteen millions of bushels; and that the total surplus of this crop over the consumption, is estimated as high as one hundred and fifty millions of bushels! It is scarcely to be presumed, that the wheat crop has increased from one hundred and seventy-five to two hundred millions of bushels within the past five years, and which it must have done to justify such an estimate, after a fair allowance is made for seed, for our increased consumption, and exhausted granaries also.

It is hoped for the sake of the farmer, that he may have a surplus over all former years; and equally so for the benefit of the consumer, that he may live without paying famine prices for his daily bread. But it is known and admitted by all, that the country has now no surplus from former years; and it is strongly doubted, whether at the end of the next fiscal year we shall find a surplus of fifteen millions of bushels, much less one hundred and fifty millions.

I usually travelled by day-light, with the view to see as much of the country as possible; yet I may have been deceived by appearances in some cases: and at last only saw a very small space in this widely extended country; but they are important points in the enquiry. As my fellow travellers and others who are practical farmers, coincide

very nearly in opinion, I think some reliance may be placed in their estimates; though at best theirs, and all others, are mere estimates, and greatly liable to err; without any intention to mislead or improperly bias the conclusions of others. Of this however, you can probably judge quite as well as

Your friend,

EDWARD STABLER.

THE GRASSES.

CARROLL COUNTY, (Md.,) Sept. 4, 1855.

To the Editors of the American Farmer:

"The Farmer," our welcome monthly visitor for years past, was received on the day of its date with increased lively feelings. Your course in deferring its publication as near the close of the preceding month as possible is important, as giving us the most reliable prices current, &c., as late as possible. The article from the "United States Magazine" is very important and interesting, and may be the means of directing more attention than has heretofore been given to "the destroyers and diseases of Wheat."

I want to mention a fact in relation to one of the two varieties of the "grain moth," which of the two, I am unable to say, as it has been some twenty-five or thirty years since its last appearance in this vicinity. A year or two before its appearance with us, it had made considerable havoc in the neighborhood of Frederick, on the banks of the Monocacy. The wheat was not only injured by extracting a portion of the flour, but the insect left a brown deposit in the grain injurious to the quality and appearance of the flour. The only way in which I could account for its occasional visitation in these parts was a succession of mild winters. The winters preceding the last appearance of this "flying weevil," as it was called, were remarkably mild, but hard winters following extirpated the whole of them.

They evidently follow water courses. The only protection against their depredations is to thresh out the crop as soon as cut and leave it in bulk in the chaff.

Providence seems to have thwarted the purposes of grain speculators in their efforts to induce farmers to hurry to market the wheat crop so as to sink the price as low as possible before the wants of Europe might be known. It is evident that to a considerable extent a panic has been gotten up; but the succession of rainy weather has prevented threshing to any great extent. It is strange that even our country papers lent themselves to this nefarious thing. The only paper that I have seen that has given a fair exhibit of crops here and prospects in Europe is the "Richmond Whig." Other papers may have taken the same course—I, however, have not seen any. When I was a boy newspapers had a stereotyped charge against them for lying, and if they don't take care they will revive the charge.

Your worthy correspondent "Patuxent Farmer," comes out strong in favor of the "Iverson grass." I received the impression from some incidental expressions of Mr. Iverson that it was a biennial, and shall wait to hear how it may be next Spring. Some years ago I tried the perennial rye grass, but gave it up. To me it was no more than a biennial, running out the second year. As to its nutritive properties I have no doubt, and my sheep preferred it to any other. The seed used by me was selected by a Scotch gentleman, (who lived in Philadelphia, on a visit to his friends in Scot-

land,) as the best variety. Perhaps my clayey land did not suit it. What is said by English writers as to the proper time of cutting for hay applies to most of our grasses—when in bloom. Dickson, an English writer on Agriculture, a man to be relied on, says: "This grass is deficient in some of the properties necessary for meadow or pasture lands." "It is, however, a grass that varies greatly according to situation and circumstances." "It is best adapted to loamy and sandy descriptions of soils; but it will succeed on any but stiff clay, and even on that it may be grown." I however doubt very much its adaptation to our climate. This is a matter to be looked to. Some sixteen or seventeen years ago I sowed thirty bushels of St. Poin seed, imported from Europe. It came up finely, promised well, but in two years there was not a stalk of it to be found alive—winter and summer together put an end to it. The field had been limed the year previous, so that it was not for want of calcareous matter.

Timothy, (*Phleum pratense*.) I believe on all hands, is admitted to be a native, and our lands are "Know-Nothing" enough to hold on to it as one that does its duty and pays well. Farmers in this region are beginning to sow the seed of this grass on their fields in combination with clover for pasture, as well as for mowing. As a pasture grass, in combination with other grasses, it does well, provided it is not let go to head before eaten off. A very intelligent and judicious neighbor of mine told me some few years ago, that he never had a more profitable pasture field than one put down with timothy and clover—he turned on it early, and the former kept pace with the latter all the season. To secure a set of this grass it ought to be sown in the fall. There is, however, an objection to this fall sowing, from the fact that if the grain with which it is sown should happen to stand thin on the ground from a disastrous winter or insects, it will be much in the way in gathering the grain—never however, let the sowing be deferred beyond the first of February. I would just here remark that I have found winter sowing of clover seed better than spring—more young clover is killed by drought in summer for want of root than by frost in the spring.

I hope that P. P. does not admire "Red top." Though its a "native," yet I go against it—it wants to have its own way more than I like, and like some of the old hangers on to the public crib, you can't get clear of it by hoe or plough, and it never makes returns for the earth you give it. It is to my experience a late and poor pasture grass, and for mowing the swath is comparatively very light, and when dried seems to be very little better than common swamp grass. I have more than once wished I had never seen it on my farm.

I have still a word to say on "Tall Oat Grass," (*Holcus avenaceus*), maugre all that was said by an anonymous writer in reply to some remarks and suggestions in reference to this grass made by me. My increased experience has confirmed me in my good opinion of it as making a good and early grass for sheep pasture. For hay, all kinds of stock eat it with as much avidity as any other. Though to make good hay it must be cut when first it begins to blossom. As a pasture grass all kinds of stock eat in common with the other grasses, and seem rather to prefer it to the second crop clover. But as an early pasture grass for ewes suckling lambs, it has no rival. You may recollect that it was in reference to this use of it that I called attention to it.

Our Corn crop is very fine, though somewhat later than usual, owing to the cool weather through the spring and early part of the summer. In this vicinity, however, we do not apprehend any danger from early frosts—how it will be farther on to the North is a question to be answered by time. We had a slight frost on the low grounds in these parts one night during the cold spell about the middle of last month, and what this present northeaster may give we can't say. Wishing you all prosperity,

I remain, &c.,

DANIEL ZOLICKOFFER.

COLOMBIAN GUANO AGAIN.

117 BROADWAY, Sept. 17, 1855.

To the Editors of the American Farmer:

Messrs. Editors:—I learn with regret that my remarks in the last No. of the American Farmer, in regard to Colombian Guano, have been misapprehended. My object in that communication was to show that Colombian Guano is not a super-phosphate, and cannot, therefore, act with the rapidity of such a manure. The fineness of its powder as sold would, however, render the decomposition of the phosphates in the soil more rapid than that of bones, which are more coarsely ground, and the greater part of this important acid which this substance contains, makes it more valuable than Mexican Guano. This, however, appears to me to be the only advantage which it possesses. It certainly contains no readily soluble phosphates, except those which are contained in its alkaline salts. The whole quantity of phosphoric acid which could be taken up after protracted digestion in hot water, was less than 1 per cent., so that the application of this manure, in the expectation that it will act with the promptitude of a soluble super-phosphate, must necessarily result in disappointment.

Very respectfully yours,

A. SNOWDEN PIGGOT, M. D.

SINCLAIR'S CORN AND COB MILL.

ATHOLWOOD, September 15, 1855.

To the Editors of the American Farmer.

GENTLEMEN:—This being a rainy day, we have been using Sinclair & Co's. Cylinder Machine for grinding corn on the cob. With 4 mules, and 14 inch pulley, without forcing, we ground 40 bushels in two and a half hours. On a previous occasion, with two mules and 18 in. pulley, we ground twelve bushels per hour. Much depends on the corn; the smaller the cob, the less time is required. The machine works well—grinds finer and better than any I have seen. Its durability, time alone can test. Believing the subject of interest to the agriculturist, I desire to sustain with my testimony, (be it worth what it may,) the excellent President of our Agricultural Society, in his views respecting the feeding of corn and cob meal. I know a working animal will do better on a half bushel ground corn and cob, (equal to one peck of corn,) than on a peck and half shelled corn. The ground corn to be fed dry, to avoid the possibility of souring. Early in the season, whilst the corn is soft, old corn should be ground with the new, otherwise the machine will clog, and not grind more than a week's consumption at a time, as it will heat. When it is entirely dry, two or three weeks supply may be safely ground.

Yours, &c. respectfully,

J. Q. HEWLETT.

Crops in Western Virginia.

ELLENDALE, VA.

To the Editors of the American Farmer.

Since my last communication, our prospect of a fine yield of wheat in this region, has been materially diminished. After securing our crops with much difficulty and delay—for we were continually interrupted in the process by dashing rains—we trusted that our embarrassments were over; but we find the worst has but begun; and the showers which but partially damaged our crops in the gathering, have changed to torrents from above, now threatening to destroy them entirely in the ricks and stacks, in which state, in ordinary seasons, we look upon them as secure from further detriment. We have, in some instances, attempted threshing, but find the grain so damp, that what I have had taken out, I was compelled to send to mill, that it might be spread out and exposed to the air to dry, to prevent its becoming worthless. From all quarters, I have similar complaints; and yesterday, after a few hours of sunshine, it commenced raining again, after the fashion of a deluge, and is still hard at it, while I am writing, with little prospect of abatement. I am not given to evil prediction, but if such weather, as we are having, be general, I cannot avoid the belief, that a considerable portion of the wheat crop will be damaged, or destroyed, and nearly all of the oats which have been stacked out, as they are for the most part, in the West, be lost.

So far, the corn crop is very promising, and only now liable to injury from early frosts, as the ears have matured, and require no more aid from sun and rain. Such of our farmers as have got out their wheat, are hurrying it to market, under the impression that there will be a further decline in prices. But I do not hold to this opinion, for I am satisfied the amount of produce is overrated, and that, be it what it may, it will not more than supply the deficiencies of last season, and the demand of the present, especially if reduced in quantity and quality, as I think it will be, by very unfavorable weather during harvest, and by damage from the same cause since, from which no usual care in stacking will have preserved it.

Yours,

W. B. B.

FARMING IN AUSTRALIA.

MELBOURNE, May 7th, 1855.

To the Editors of the American Farmer.

DEAR SIR:—Several of my agricultural friends have desired me to subscribe to the Farmer. You will please send to Mr. James B. Bond, No. 80 Beaver street, N. York, the numbers for this year, (1855) and he will remit to you for the same.

Who would have supposed a few years since that your paper would ever be in demand in this antipodean world.

Our farmers are commencing to use guano to some extent, and ere long I suppose it will be an article of considerable import from Peru. I can see no reason why your paper may not within a few years have quite a large circulation in these Colonies. The farmers here stand much in need of such information as your paper has so fully disseminated throughout the United States; they will only have to reverse the seasons, and yours will be the best guide afforded them.

Our wheat crops are harvested in the different Colonies, all the way from December to the middle of February. There has been a failure of more or less extent in this year's crop, in all the

Colonies, and good samples of wheat readily command \$4 per bushel of 60 lbs. Crushed corn \$3 per bushel of 54 lbs.

Flour.—Gallego (3000 lbs.) "Ex. Windward" was quoted at an average of about \$21.50 per bbl., and we shall be compelled to draw largely on Chili and the United States for supplies during the entire year.

Our rainy season has just commenced, and the grass fields are already showing the effects of it. Our farmers have within the past ten days been enabled to get their crops in the ground.

You will recognise in my signature an old subscriber, who although far distant, feels an interest in the prosperity of your paper, which is often called to mind when he beholds the miserable farming in this section of the Colony.

I wrote to a friend in Baltimore some months since, that a farmer within eight miles of this city sold on his farm one stack of hay for upwards of \$17,000, about \$85,000—this was the product of 225 acres, averaging 2 tons to the acre, at \$38 per ton, and this, strange to say, was in the wisdom of the farmer put in one stack. One small spark might have swept this large amount from his grasp in a few minutes.

The hay used here, is the oat with the kernel in it—consequently two tons to the acre is no great yield on account of its great weight, but two tons is much more than an average.

Yours, truly,

JOHN R. RICARDS.

THE IVERSON GRASS.

DODDORIDGE COUNTY, Va., 18th August, '55.

To the Editors of the American Farmer.

DEAR SIR:—From your editorial remarks upon my last month's communication, I regret to perceive that one of my sentences is liable to be construed into a charge of partiality on your side, in favor of the Iverson grass. In receiving my letter in print, I must acknowledge that the expression ("selected") made use of strikes me as somewhat calculated to convey that impression, although nothing could be farther from my real intention. I therefore, in justice to you, as well as to myself, hasten to declare that my phrase had no meaning whatever that should have called forth an explanation of your relations with Mr. Iverson on his grass seed. If I had harbored any such thought in my mind, you would have been apprized of it by a simple request to discontinue my paper, as I would no longer entertain any respect for, and confidence in an agricultural journal, that would so far forget its mission and its character, as to become the channel of mercenary puffs. Moreover, it would not speak very highly of my discriminating powers, if after nine years acquaintance with the "Farmer," I had no better opinion of its worthy Editor.

Your paper has been the alphabet and dictionary of my agricultural studies and experiments. I never dispense with its guidance in all farming operations, and gratefully recognize its enlightened and benevolent influence in their result. It is the most welcome literary visitor at my fireside, and the only periodical out of eight to which I subscribe, of which I can say its Editor cares for more things about me than my dollar.

It is on account of my high regard and earnest solicitude for the character of your estimable journal, that I am glad you published at least one statement unfavorable to the Iverson grass. In

your line of business, a good conscience ought not to dispense altogether with a proper care of appearances.

Since my "nom de guerre" is not sufficiently transparent, I feel no hesitation in giving my name below, for the benefit of parties concerned, if required. But before the public I beg leave to remain as heretofore,

Your friend and obedient servant,

DODDRIDGE.

We accept of course the disclaimer of our friend "Doddridge," in the spirit in which he offers it, and give his letter with its flattering estimate of us, because he seems to expect and wish it.

GREENBRIAR AGRICULTURAL SOCIETY.

PALESTINE, GREENBRIAR Co., Va., }
September 3d, 1855. }

To the Editors of the American Farmer.

The second Fair of the Greenbriar Agricultural Society, was held on Tuesday and Wednesday last, the 28th and 29th of August. The exhibition was so creditable to our Infant Society, that I deem it worthy of some notice. The address was delivered by Rev. James Remley, a member of our Board. It was an excellent production, and well adapted to the occasion. Upwards of 150 cattle (calves included) were on exhibition. They consisted mostly of Durhams crossed upon our native stock. They were distinguished for the symmetry of their form, as well as for their size.

I saw yearlings that would net 400 lbs., and some two years of age that would net 600 lbs. I asked a distinguished citizen of Eastern Va.—himself a farmer and a member of the *State Society*—how our cattle would compare with those on exhibition last fall in Richmond. He said with emphasis, "Yours are decidedly superior." I heard similar remarks from gentlemen familiarly acquainted with cattle in different parts of the United States. Do you ask Messrs. Editors how comes it that we have such cattle here in the mountains of Virginia?

The answer is found in the luxuriant pastures of green-sward that are so abundant in this lime-stone region.

A large number of horses were exhibited, and premiums were awarded, not only for the best breeders, and for the best colts, but also for best saddle horses, best buggy horse, best draught horse, best pacer, best trotter, fastest pacer and fastest trotter. The ring where the horses were put on trial was $\frac{1}{4}$ of a mile in circumference. A black attached to a light buggy made a round trotting in fine style, when a bay with a large buggy with top, and a driver weighing 200 lbs. put in, and in four rounds he gained one complete round on the black and came out foremost. While this was going on, it began to rain; but the immense crowd took no notice of it until it poured down in torrents, and even then, most of the people stood their ground until they saw the end.

One gentleman exhibited a pen of sixteen mule colts. His Jack, worth from \$800 to \$1000, having been removed from the Fair grounds on the evening of the first day, died at night apparently without a cause. On opening him, it appeared that a blood vessel had been ruptured, the result of a kick.

The ladies' tent was well filled with beautiful specimens of their skill. Many names deserve a special notice—I shall however give but one. Mrs. Lewis Wetzel, of Lewisburg, exhibited an em-

broidered handkerchief of surpassing beauty. I hope she may consent to exhibit it at the State Fair.

I am sorry to say that the department of domestic manufactures was not so well filled as was desirable, but most of the articles were of superior workmanship.

We were honored with the presence of Ex-President Tyler, U. S. Senator Mason, the Judges of the Court of Appeals, and several other gentlemen known to fame.

President Pierce having been compelled to leave the White Sulphur the day before the fair, on business connected with the government, addressed a letter to us in answer to a request to visit us, expressing his high appreciation of agriculture, and the pleasure, as well as benefit, he had received from his visit at our mountains.

When looking at a pen of fine cattle, Ex-President Tyler remarked, "How much more pleasant to be engaged in raising such stock as this than to be spending one's days in political strife."

Yours, very truly,

L. A. ALDERSON.

THE RESCUE GRASS.

PRINCE GEORGE'S COUNTY, Md., }
August 4th, 1855. }

Messrs. Editors:—One of my neighbors purchased some of the Rescue grass seed, and sowed it in the month of October, (1854) upon a fertile but unmanured lot. Despite a long spell of dry weather immediately succeeding, the seed germinated well, and grew slowly, but constantly. So soon as the grass attained the height of three inches or four inches, two heads of young stock were turned upon it, and permitted to remain until the first of April. These, in excellent condition, were then removed, and the grass was every where eaten to within two inches of the ground. About the first of May, the seed commenced forming. In the middle of that month, a seed bearing stalk of average height, measured twenty-three inches.

The favorable opinion I have formed from the result of this experiment, is enhanced when I remember it was not conducted as Mr. Iverson suggested. No peas were sown with the seed. The seeding itself was delayed much beyond the period recommended, and no culture was subsequently given. The winter I may add was unusually cold and dry, and the spring less favorable to the growth of other grasses in this locality, than perhaps our oldest inhabitant has ever before known. In defiance of these untoward circumstances, through every change of temperature and seasons, this grass has preserved its verdure and continued its growth.

Will Mr. Iverson add to the information he has already given upon the subject, by stating his views of the propriety of sowing the seed of the Rescue, for a permanent pasture, upon which it is proposed to keep stock from the beginning to the end of the year? His previous communications, though generally very specific, incline me to suppose that the shedding of the seed, at least once during the year, is necessary for the re-production of a crop. Even thus, it is the most valuable grass that has ever passed under the observation of one, who recommends and proposes its culture, not as the seller, but as the purchaser of the seed.

A FARMER.

AMERICAN FARMER.

Baltimore, October 1, 1855.

TERMS OF THE AMERICAN FARMER.

Per Annum, \$1 in advance—6 copies for \$5—13 copies for \$10—30 copies for \$30.

ADVERTISEMENTS.—For 1 square of 8 lines, for each insertion, \$1—1 square per annum, \$10—larger advertisements in proportion—for a page, \$100 per annum; a single insertion, \$15, and \$13 50 for each subsequent insertion, not exceeding five.

Address,
S. SANDS & WORTHINGTON,

Publishers of the "American Farmer,"
At the State Agricultural Society's Rooms, 128 Baltimore-st.
Over the "American Office," 5th door from North-st.

ANNUAL EXHIBITION OF MD. STATE AGRICULTURAL SOCIETY,

On the 30th and 31st Oct. and 1st and 2d Nov.

We have the pleasure to announce that the amplest preparations are in progress for the Annual Fair of the Maryland State Agricultural Society, and that the Executive Committee with an improved Premium list and other requisites, anticipate a most successful Exhibition. The great and rapidly increasing numbers of the finest stock introduced and bred in the State, under the stimulus given by this Society, have become a considerable and growing item of the State's wealth. This value is not confined to a few herds, but is year after year impressing itself upon all the live stock of the State—so that scarcely a flock or herd is to be met with which is not more or less benefitted by it.

The competition in the manufacture of improved implements, and the opportunity offered for their advantageous display, is spreading the fame of Maryland mechanics far and wide. It is impossible to estimate the value added to the State's wealth, by the many valuable labor-saving implements which the farmers have here an opportunity of examining and getting information about.

Besides these chief items of the Exhibition, the various other matters of interest in the way of improved and highly cultivated farm productions, Household manufactures, &c. will combine, we trust, to make a Show of which Maryland Farmers may not be ashamed.

The public spirited and indefatigable President of the Society, with his efficient aid of the Executive Committee, will leave nothing undone to make the Exhibition worthy of themselves and of Maryland Farmers.

We cordially invite our farmer friends of every State to be with us, and expect every true Marylander to give the Exhibition the countenance of his presence, and the aid and comfort of a member's subscription. The money is a small matter to each one of them, but it is a great matter to give adequate support to a patriotic State Institution.

Moreover, why should not this be made the great Agricultural Anniversary and Holy-day,—

when farmers with their wives and their sons and their daughters, may meet from all quarters, and spend a week together in innocent amusement and mutual entertainment and enjoyment of one another's society—showing in their cheerful, happy faces, their thankful hearts for a fruitful season, and the abundant increase with which the earth has been crowned. We beg our friends so to arrange their matters at home, that they may give one whole week to a pleasant sojourn in Baltimore. The Society meets at its Hall on the 29th.

The annual and most interesting Exhibition of the Mechanic's Institute, will as usual take place at the same time, and is of itself worth a visit to Baltimore.

EXPORT OF BREADSTUFFS.

The following editorial items we extract from the Baltimore Sun of a recent date, which we commend to the attention of the correspondent of the National Intelligencer, who doubted the correctness of our remarks about Mr. Peabody's opinion of the requirements of Europe for our breadstuffs:

"The Produce Export Movement.—The large export movement that is to take place in breadstuffs is indicated by the fact that freight engagements for forward delivery are made at higher rates than now prevail. The Liverpool packets from New York, for October and November, are already engaged nearly full of produce."

And from the New York letter of the Baltimore American, of the same date, the following paragraph is taken:

"The agents in this city of the Greek merchants have engaged freights for breadstuffs as far ahead as the middle of November, and are making large contracts for flour at present prices. The Greek firms alluded to are extremely shrewd and calculating in their movements, in regard to the cereal crops."

And from the circular of the Messrs. Baring & Co. we copy the following:

"LIVERPOOL, August 31st, 1855.—Breadstuffs—a sudden change from wet and stormy to hot, sunny, and forcing weather, has produced quite a pause in the excitement recently current amongst our grain men. We have had fully three days now of this glorious weather, which has been almost universal throughout the land, and the good done to our Wheat Crop has been great; our chances now of an average crop are greatly superior to what they were a week ago. The late accounts of the poverty of the Continental Crops are fully confirmed; and 'tis said official accounts from France state that the crops there this year will be one-fourth less than last. Since Tuesday afternoon an active business has been done in floating cargoes of Wheat and Maize at extreme rates. It is now generally believed that the bulk of the recent shipments from the Danube will find their way to Continental ports; should this prove to be the case, there will be much less chance of lower prices here for Breadstuffs for some time at least. Since the Arago left, a fair business has been done in Wheat and Flour at rather easier rates."

Since the above was in type, we have another

arrival, and the N. Y. Journal of Commerce makes the following comments on the commercial feature of the news:

"The news from the other side is of a mixed character, and is not yet fully digested. Most of the letters from France contain orders for breadstuffs, and these are couched in very excitable terms, characteristic of the Frenchman. The orders from Great Britain are less numerous, but all of the letters and circulars speak of the probable necessity for large importations, notwithstanding the favorable weather for harvest, much of the wheat having been winter-killed. The Bank of England has raised its rate of interest from 3½ to 4 per cent., an advance of ½, not on account of the scarcity of money, but to prevent speculation in breadstuffs; a further advance will doubtless take place if this should not prove sufficient.

A letter to the Philadelphia Inquirer, dated New York, Thursday evening, says:

"The flour market has been quite excited to-day, and prices of common and medium grades have advanced 1a2 shillings. Considerable orders came out by the Baltic, and over 10,000 barrels were purchased by shippers. Six thousand barrels of common State were bought, to arrive next week, and 2,000 barrels Ohio, to arrive within two weeks, the former at \$8 and the latter at \$8 12½. At the close holders were firm, and insisted upon still higher prices."

THE GUANO TRADE.

To the Editors of the American Farmer.

Whilst the government to save two or three hundred dollars to the commercial interest of the nation, declines to pay to Denmark the paltry Sound dues, how strangely inconsistent she is in fostering the agricultural interests. The Peruvian government is permitted to mulct them of thousands, in the monopoly of the guano trade, while she tho' holding the remedy in her hands, remains quiet.

It does not cost more than thirty dollars to get guano to Baltimore, which sold at the present prices, is a profit of twenty-three dollars per ton to Peru.

The only remedy, is to place a prohibitory duty on the importation, unless it be sold at a price which places it within the reach of a larger number of consumers. It is customary with regard to some manufactures, why should it not be so with a manure which has now become almost a necessary?

Will you put these ideas in better form, and place them before the public in your paper, and by so doing oblige a

FARMER.

KING GEORGE C. H., Virginia.

POWHATONVILLE, Va., Sept. 10, 1855.

To the Editors of the American Farmer.

I regret the new obstacle thrown by the Barredas in the way of the farmers. It is very unjust, that the farmer wanting a few tons (generally men in moderate circumstances) must pay more than those requiring large quantities (who are necessarily men of capital.) The agents have thus always managed to harm the smaller dealers in guano to the benefit of the larger. I wish Congress would impose a duty amounting to prohibition, unless guano was sold under a certain sum, which shall be that furnishing a reasonable profit (and no more) to the importer. Yours most respectfully,

E. P. T.

We have other communications of the tenor of the above, which show the excited feeling of the farmers in regard to the trade in guano. The doubt and uncertainty continually managed to be kept up in regard to the trade, is the worst feature in it. It is a monopoly, and the exactions, extortions, delays, and difficulties connected with the trade, but not necessarily so, are calculated to render it odious to all who have aught to do with it. We fully concur with our correspondents, in the wish, that unless the Peruvian government makes some change in the system now adopted, that our government should take some measures to relieve us of these exactions. Year after year, the farmers have been complaining to the government for protection—and we venture to say, that if any of our citizens, resident in a foreign land, had been made to suffer by the government of that country in their person and estate, as has been the case with hundreds and thousands here, the strong arm of their country would have been demanded to redress their grievances—but here, in the very heart of our own country, such scenes are enacted by the agents of a foreign government, as are sufficient to arouse the indignant feelings of every American heart—for it is professedly the act of the Peruvian government, which is the head of this monopoly, and they of course are responsible for their subordinates. We hope the subject will arrest the attention of our Agricultural Societies during the present Fall, and some concerted action be taken in regard to this matter. We may probably present some facts in a future number, calculated to show up the system in its proper light.

PRICE OF GUANO.—In our last we stated that "from the best information we can obtain, there is "no reason to anticipate any change in the terms and "prices of the Messrs. Barreda & Bro., Agents of "the Peruvian government in this city, from those "which have prevailed since 1st July." It is due to ourselves to state, that the above paragraph was shown to the gentleman having the business in charge for Messrs. Barreda, but four or five days before the 1st of the month, and the assurance given us, that there would be no change, so far as he was aware. Mr. Barreda had been here but a day or two before, and the mail from the Pacific had arrived within a few days, and we naturally concluded if any change had been determined on, it would be then known—and as our paper is put to press several days before the 1st, in order to begin mailing by that day, we asked for the information, in order to save time and trouble and delay, in forwarding orders by farmers, for their supplies. But a change was made, on the 1st, affecting the entire business in the article, and causing an advance to the consumer of several dollars on the ton—although it is still asserted by the party alluded to, that there is no change! Instead of selling as before in certain quantities at \$50 per

ton, whereby the farmer could obtain the article at \$51, the quantity sold to each person was restricted to a lesser amount, (500 tons) consequently at a higher price, (\$53.) Our readers can make their own comments.

TURTLE SOUP—FROM BEANS.

We have often heard of *mock-turtle* soup, and, like many others, have often eaten of it, presuming for the moment that we were partaking of the article made from the Simon-pure Green Turtle, when, in fact, it derived all its dignity of flavor from a calf's head and the cunning of the cook. But whoever before heard of *Turtle-soup* being made of *Spanish Beans*? Why, the writer of this has not only heard, but eaten of it, with the *gusto*, not of an epicure, but with the appetite and taste of a man keen and discriminating, because they had not been vitiated by inordinate indulgence,—who believes that the philosophy of health consists in stopping at that point which repudiates *gormandizing*, believing it to be the antipodes of enjoyment,—and who looks upon moderation in eating, as the true safe-guard of every one, who would preserve the energies of his body and mind in their integrity and vigor.

When we commenced the above paragraph, our intention was, simply, to give the *recipe* for making a soup out of *Spanish Beans*, which is so like *turtle soup*, that very many, who may eat of it, would smack their lips under the pleasing conceit that they had really partaken of the genuine article; but we find that we have unwittingly fallen into a fit of moralizing, and as that was foreign from our object, we will dismount from our stilts, and give the *recipe*.

Take the usual quantity of beans, (the *Spanish*, a black bean, sometimes called *Black Mexican*, at others, *Black Dwarf*.) wash them, put them into a pot with the proper quantity of water, boil them until thoroughly done, then dip the beans out of the pot and press them through a colander, return the flour of the beans thus pressed through the colander, into the water in the pot in which they were boiled; then tie up some *thyme* in a clean linen or cotton bag, put it into the pot and let it *simmer* a few minutes; then boil a few eggs *hard*, take the shells off, quarter the eggs and put them into the soup, together with a sliced lemon, add a little butter, and season with salt and pepper, and you will have a soup so nearly approaching the flavor of the real turtle soup, that few, except for the absence of the meat, would be able to distinguish the difference.

Those who like wine in their soup, can, of course, add it so as to suit their respective tastes.

We give this *recipe*, in order to encourage the culture among other varieties of the Bean of this particular one, and to allow time to procure seed for next year's planting.

This variety of the bean is nearly black, which imparts to the soup the color of that made from turtle—it is rich in the elements of nutrition, delicious in flavor, and as we think, a very superior variety—a variety that should have a place in every Agriculturist's garden—if not in his field—as besides its excellence for culinary purposes, it is a prolific bearer.

Some, in the preparation of this *Bean-turtle-soup*, add force-meat balls, which are prepared thus:—

Chop beef, or veal, (boiled or unboiled) very fine, together with a hard-boiled egg, season with thyme, savory, parsley, chapt fine, and with mace and cloves powdered; mix the whole together with a little wheaten flour—roll the mass into balls, and place them into the pot of soup to simmer a short time.

AUSTRALIA.—A STACK OF HAY.

Designing to confine our attention to our own "unbounded Continent," in our August No. we made over our interest in the Sandwich Islands to our cotemporary of the *Country Gentleman*, who tells us since, he has been doing already Missionary labor there. It will be seen, however, by the letter of our correspondent at Melbourne, Australia, that we must pass the confines of this "pent up Utica" of the North American Continent, to follow our destiny "*Usque Auroram et Gangem*."

That stack of hay of which our correspondent writes is—*remarkable*. Think of four hundred tons in one stack—think of \$85,000 for a stack of hay! Had not the statement come so directly from a reliable source, we should have suspected it of having at least one quality of the monster described by the poet, which gained strength by its travels, "*vires acquirit eundo*." To those who affect slang phrases, "a stack of hay" may hereafter be more expressive than "some pumpkins," and we think more dignified. We saw some years ago, a distinguished Agricultural writer, not unknown to our columns, described as "some pumpkins"—the phrase, we think, "doth not become the mouth as well" as "a stack of hay," and any confusion of ideas as to a "man of straw" would be obviated by the ready association of the \$85,000—and give to the person so described a money value which would fit him for the highest financial office of the State. What does our correspondent P. P. think of it?

✎ We commence in this Number, to be concluded in our next, the Prize Essay of Dr. Bickell, for which the premium of One Hundred Dollars was awarded by the Committee of the Maryland State Agricultural Society. We call attention to the note of Prof. Morfit explanatory of the action of the Committee.

REAPERS AT PARIS.—A statement having appeared in some of the newspapers with reference to a trial of Reapers on exhibition at Paris, we are requested by Mr. Hussey to say that he had no Reaper at the exhibition, and of course did not enter into competition at the trial alluded to.

FAMILIAR SCIENCE.

A correspondent of Posterville, Tenn., thinks we are mistaken as to the facts in one of our late Nos., headed "Cows and Chemistry," and gives several facts in proof of the predilection for bones on the part of cows. We do not care to insist on the fact, and our friend will see that it is not material to our purpose whether cows really chew bones or not.

Our intention in the article alluded to, was by raillery, rather than serious argument, to throw discredit upon the flippant manner in which, by some agricultural writers, every trifling fact is referred to a scientific principle, and the frequent attempts of "little wanton boys who swim on bladders," to persuade themselves and others, that they have "sounded all the shoals and depths" of science. We are equally unwilling to have science unduly exalted, or unwisely degraded; and it is as well sometimes to laugh at follies, as to scold at them.

The subject of bones seems to be a favorite one with this class of writers. We have before us an article from an exchange, on the use of bone dust, which we should think a good burlesque of this style of writing, did it not appear that the writer is intensely serious. He talks very learnedly of the per-centage of phosphates in wheat and Indian Corn, of the effect of the quality of the food we use upon the system, and thus wisely discourses:—

"There is no doubt but that 'bone dust' is a good fertilizer, and will produce equally as much grain, as some other kinds of manure; but when it produces that which is gradually destroying the human being, would it not be quite as well to raise less grain, and enjoy this life a little longer? There are a great many bones ground up for manure, judging from the number of wagons engaged in the business. For at least twenty miles around Philadelphia the bone-pickers are to be seen gathering all the old bones they can find, and hauling them to the city, where they are manufactured into 'bone dust,' and then find their way to almost every neighborhood, where the farmer in applying them, unconsciously supplies us, through the medium of his crops, with an increased amount of obstruc-tion, choking-up, and death-producing matter!"

Under these new lights, the danger of introducing the phosphates too freely into the system must be carefully guarded against. Mothers must not only caution the little ones against fish-bones in their throats, but must have their bread analysed, to be sure that it is not over-charged with the "choking up," "obstruc-tion" quality of the phosphates.

When baby strangles at the breast, the playful remark that the milk has a bone in it, is a scientific fact which indicates that the nurse had not been careful to ascertain whether the bread she ate for breakfast was grown on land manured with bone dust! The worthy old man who is going quietly, with a good conscience, and the respect of his fellows, down to the grave, is now to be told that science has searched him out even to his bones

and marrow, and pronounces him—by reason of a long course of calcareous accumulations in his system—a "hard case!" As for the venerable Mathuselah, it is a marvel how he "shuffled off his mortal coil," *any how*.

The run mad enthusiast, who thinks his favorite science omnipotent for good, is humorously shown off in the following from the New York Spirit of the Times:

"My dear Jones, I am sorry to have to inform you, that your horse has a nail in his foot."

"Pooh, that's nothing!—I can take it out."

"Yes, but it's broken off in the hoof."

"Don't make any difference; I can easily take it out."

"How?"

"Why, by putting the foot into a large crucible, and heating it to a white heat; as soon as the iron reaches a state of fusion, it will run off of itself, and be found in the bottom of the crucible."

"But you'll carbonize the horse's foot."

"Oh, that's nothing, I can easily de-carbonize it."

"Yes, but, my dear sir, you don't mean to say, that after the horse has had his foot and leg burned to a cinder, he'll ever be of any earthly use, do you?"

"Of course I do; to be sure he will. After I subject his leg and foot to the process of de-carbonization, I shall re-fluidize the contents of the baked blood-vessels by injection; then all I have to do is to vitalize the fluid so injected, when natural circulation will ensue, all the parts will receive their proper nourishment, and in half an hour the horse will be as well as ever he was."

GRASSES AGAIN.

The letter of our esteemed correspondent, Mr. Zollickoffer, on the subject of the Grasses, well deserves attention. On no subject are we more anxious to furnish our readers with the opinions of intelligent and experienced farmers, and we lose no opportunity of impressing on them the importance of making the cultivation of the Grasses the foundation and ground-work of their improvements. Let them assure themselves, that no farm can be economically managed without an abundant supply of Grass for the purposes both of grazing and winter supply, and that no reliable permanent improvement of the soil can be made without it. All lands on which Guano is now so successfully used—where heretofore it was mere waste to sow the seed—may be permanently and indefinitely improved, by the judicious use of grass-seeds in connection with Guano. If this valuable fertilizer were entirely devoted to the growth of grasses, we should be much more hopeful of the final benefits to result from its use. Let those who are raising large crops by the use of it, be warned in time, that this, like other manures, may, after frequent use, fail of its magical influence, and that if they lose the opportunity of permanent improvement now offered, it may entail upon them a curse of barrenness more hopeless than the first. The use of Guano puts it in our power to grow the

grasses successfully, and increases the necessity of so doing.

Mr. Zollickoffer, it will be seen, has a high opinion of the "Tall Meadow Oat Grass," so highly extolled after many years trial by Col. John Taylor, of Va., and as much abused of late years by other writers. It furnishes another specimen of how doctors may differ on what would seem to be a matter of very easy experiment.

The suggestions of Mr. Z. as to Timothy for pasturage as well as hay is confirmed by our own experience during the past season. Our clover of last year's seeding having almost entirely failed, the only, but very sufficient resort for pasturage, was the Timothy sown with clover upon the wheat field of the previous year. We sowed our timothy in October and clover seed the following spring. We agree with Mr. Z. also as to sowing clover seed as early as February. The risk from frost is much less than that from drought and hot suns.

EFFICACY OF SALT AS A MANURE.

WHEAT—A HEAVY CROP.

The *Olive Branch* has the following paragraph upon the above subjects:—

"Mr. S. M. Brown, of Elbridge, Onondago county, New York, harvested in the year 1846, upwards of 400 bushels of fine flint wheat, (the most approved variety) from 8 acres. This is doing well, being, as our readers will perceive, more than fifty bushels to the acre. This wonderful yield is ascribed, in great part by the proprietor, to the salutary effects produced by SALT—an application of which, to the amount of three bushels to the statute acre, was made before sowing the grain. We have long been fully aware that no substance can be more decidedly and obviously effectual in its application to soils infested by slugs and worms, than common salt. Highly as we appreciate lime we yet regard it as inferior to salt, and we have no doubt that were it more frequently used, our field crops, both as regards quantity and quality, would be appreciably increased. The idea not long since promulgated in some of our Agricultural papers, that salt, in order to prove efficacious in expelling worms, &c., from the soil, must be applied in sufficient quantity to kill them, is of a piece with numberless other theories of the day. When worms or other depredators detect an ungenial principle in the soil, they at once forsake it; the warnings of instinct being sufficient without the agency of death in the matter, to effect their expulsion."

It is to be regretted that the Editor of the *Olive Branch*, if in his power, had not gone further, and given us some insight into the character of Mr. Brown's soil, his system of ploughing, harrowing and rolling of his land—in a word, his entire plan of preparation, including the application and kind of animal manures, if any were used by him. With these facts before us, we could the more fully have comprehended the precise benefit ascribable to the application of salt. The lands of Onondago county, New York, are generally fertile, and doubtless have very notable proportions of vegetable and animal remains in the soil, and as the

location of that county is in the Lake country, its soil derives no benefit from the sprays of the ocean, and hence, the application of salt would be highly beneficial; not only for the supply of its own elemental constituents, which it necessarily furnished, but for the power it exerted in decomposing the animal and vegetable matters in the soil, thus preparing food for the plants, by its increasing the power of the soil to attract and absorb moisture from the atmosphere; thereby retaining a degree of moisture in the soil, and consequently, maintaining a desirable coolness therein, and by checking the escape of ammonia on every recurrence of rains through the agency of its muriatic acid.

Although we are a strong advocate for the use of salt on all dry, sound soils, located beyond the influence of the sprays of the ocean or salt water rivers, &c., we do not carry our advocacy so far, as to presume that poor land, unaided by animal manures, could, by the application of salt, alone, be made to yield luxuriant crops, though, on such soils we believe that it would operate beneficially, as well through its constituent substances, in the shape of food to the plants, as by its agency, in attracting and condensing the moisture of the atmosphere, by rendering the soil more moist, and by its other agencies as before pointed out.

We have long thought, and so advised, that a few bushels of salt per acre, say from 2 to 4, would be found advantageous, if periodically applied, to all lands placed locally beyond the influence of salt sprays. In the culture of oats we have derived the most signal benefits, so also in that of potatoes and corn, mixed with plaster and ashes. We used it on these crops with the view of destroying worms, and of affording positive food to the plants.

PREVENTION OF SMUT IN WHEAT.

The following is the method adopted by Gen. Harman, of western New York, one of the most successful wheat growers in that State:

All small or imperfect kernels are sifted out, and nothing but the matured seed sown. Twenty-four hours before the seed is sown, he washes it in a brine as strong as salt will make it. After draining it a few minutes, he mixes with each bushel two quarts of newly slacked lime, and then sows and covers the seed.

Gen. Harman further remarks:—The above is my course of operation. My average crop for several years has been 28 bushels per acre, of very superior quality, mostly used for seed. My price has uniformly been 25 cents per bushel over that of the millers.

✍ A correspondent at Summit P. O., N. C., says:—"I would like to have the views of yourselves or some of your correspondents in regard to the five field system of farming." Will some of our friends give us an article on the subject. We shall be glad to hear from J. W. P., as he suggests.

MANAGEMENT OF A STOCK OF HOGS.

Does it pay to keep hogs upon a farm? that is the question. We don't know that it does, but we think it ought to pay. It is getting to be a general impression, that to raise one's own pork, and to save one's own bacon, is an expensive luxury. We do not think it is necessarily so, and will give our young friends and others who want advice a few practical hints on this subject.

A good breed of hogs you must have to start with, and thanks to the improvements of the day, you can easily get. No matter how good the breed, however, never suppose he is to live and thrive without proper and sufficient food. The more artificial the breed, and the more highly improved, and the more capable of yielding a profit to good management and proper treatment, the less capable they will be of shifting for themselves. If you want a hog that will take care of himself, tear your neighbor's cornfield to pieces, and yield you no profit, get the land shark, with his nose, back, and belly exactly suited to carrying out the intelligent designs of an animal which, from its earliest infancy, has been thrown upon its own resources.

Having got a good breed, have a generous confidence that he will repay your most careful attention. It is desirable to have a permanent fixture, a lot of one or two acres, according to the number you keep, and in this have good lodging pens, where in all weather they may have dry beds of leaves, and make themselves quite comfortable—these may be made of logs, as is very common on large farms, but made of posts with plank on the most economical scale, are cheaper, perhaps, in the end. Give him any amount of liberty which may suit your convenience—let him roam in the woods in winter, or in the pasture in summer, but have your lot and your houses where you can at your pleasure, bring them under proper restraint, and give them proper protection. This lot will be very useful likewise to put your pen hogs into for a week or so, in anticipation of their closer confinement in their feeding pens, that the change may not be too sudden from their "larger liberty."

Management of a Stock of Hogs.—The usual practice in the management of hogs is to keep the whole stock for the fall killing, through the previous winter. In this practice lies perhaps, the secret of want of success in hog-keeping. The most economical method, we are inclined to think, would be to keep sows enough to have the whole stock of pen hogs come about 1st March; to be well prepared with Ruta-baga turnips, or other roots, a lot of rye or other early pasture, and clover field, to furnish both sows and pigs with full supplies of succulent food from the start, and throughout the season, and of other food, as may keep them rapidly growing throughout the season. Such management may bring any tolerable breed to a weight of 150 to 170 lbs. by middle of December.

This plan would require for a pen of forty hogs, eight brood sows. These sows with the boars, would be the whole stock to be wintered. They should be so managed that they would bring their pigs by the 1st of March, and allowing for miscarriage or other accidents, might be relied on to average five to the sow. The sows being allowed to breed again, would have as many or more pigs about 1st September. These in a good pasture would cost very little to raise them, and might be disposed of in the fall, leaving only the stock of sows and boars after the annual killing. Of the eight sows, four might go into the fattening pen annually, to be substituted by four young ones, so as to have always one-half the number, old breeders. When this is done, it would be advisable not to allow the four which are to go into the fattening pen, to breed in the summer.

Another arrangement, a compromise between this plan and the common method would be, for a pen of the size mentioned, to have four brood sows. The August and September litters of these, being kept in good condition, would go easily through the winter with proper care, and with the four sows and boar would constitute the stock to be wintered. Then taking the March litter as before, force them rapidly forward, and unless the fall litter has been particularly well kept, these will rival them in the killing pen. We think either of these suggestions, under judicious management, would take the balance of the hog account from the loss to the profit side. True economy in the management of all animals requires that they be carried as rapidly as possible through the chances of life, to that point of development at which they afford a return, and he is the best manager who approximates this in his practice. Old habits and old prejudices will fight against it, but we will come to it by and by.

Feeding.—A corn and cob crusher the man who keeps twenty hogs must have—that is settled. A boiler we think he will have, if he is determined to make the most of his means. He should grind every ear of corn, and soak a number of hours at any rate, if he does not steam or boil. If he only soaks, he should have two tubs, to be fed from alternately, and whenever he empties one, fill it again. If it ferments somewhat, it will be the better. Boiling, however, would be much better, and ensure the appropriation of the whole nutritive matter. This food, with Ruta-baga turnips, or other roots boiled or unboiled, both occasionally perhaps, and in such quantity and proportion as your judgment and experience may direct, will be the proper food for your sows—giving them enough only to keep them in good condition during the period of gestation, and ample supplies when nursing. A rye pasture will give early and valuable green food, (Rye for this purpose should be sown 1½ bushels to the acre,) and the red clover succeeding, will keep up the supply. The pigs to be weaned at ten weeks old

CHEMISTRY APPLIED TO AGRICULTURE.

We commence the publication in this number, of the Essay of Dr. Bickell, on the subject of a formula, for the use of farmers, for the analysis of soils—and in connection therewith, we give the following communication from Prof. Morfit, of this city, one of the gentlemen appointed to examine the essays presented for the Society's premium, by which it will be seen that Mr. M. has but little faith in the practicability of any formula, for the purpose intended by the Society, until a proper chemical training shall be made a part of the educational course of the farmer, (at which conclusion we have not but recently arrived ourselves,) and that his assent was given to this essay, because, in his opinion, it was the "best," such being the requirement of the resolution of the Society:

To the President of the Md. State Agricultural Society:

Sir :—The Committee on "Formula, &c.," having made its report without any accompanying statement, I desire, as a member of that Committee, who voted with the majority, to supply the record, as regards my own action, by saying that the choice of Dr. Bickell's paper was upon its intrinsic merits of completeness and simplicity, and in literal compliance with the terms of our appointment—your Society having resolved that the premium should be awarded to the "best Essay."

This explanation is necessary to prevent any misinterpretation of my views in the premises; for I do not wish to be considered as professionally countenancing such an illusion, as that the exact knowledge and nice manipulation involved in a faithful and serviceable analysis, are at all possible for a practical farmer, or for any one unused to the atmosphere of a Laboratory.

The practice of Chemistry is not a matter of mere handicraft;—it is founded upon unerring principles, a full knowledge of which is indispensable to avoid caprice and uncertainty in operations. When this knowledge is wanting, the results obtained can only be accidentally correct; and are so often at variance with those of educated and skilful experimenters that they only serve to bring discredit upon Science and its followers. Consequently, no formula, however explicit, could be adapted to the capacity of the uninitiated. The true remedy is for the farmer to learn to work understandingly. A chemical training should be made a part of the educational course; and until this new implement is brought into the field, Scientific Agriculture must remain stationary.

Respectfully,

CAMPBELL MORFIT.

University of Md., Balt. Sept. 3, 1855.

VENEZUELA—THE SUPPLY OF GUANO.—In the House of Commons Lord Palmerston, in reply to an interrogatory, has stated that the opinion of the law officers of the Crown of Great Britain could not assert any claim of sovereignty over the island of Aves, on which the Government of Venezuela had granted a right to collect guano to certain American adventurers, but instructions had been sent to our Consul General at Carracacas to require from the Government of Venezuela that British subjects should have the same facilities of obtaining that article which might be accorded to the subjects of any other country.

Maryland Farming in 1774.

TALBOT Co., August 12, 1855.

GENTLEMEN:—I send you a memorandum of the wheat crop produced on this farm in the year 1774; it is in my father's hand writing; it is a true bill, and, I doubt whether Talbot county makes as good an average as fourteen and a half bushels for one, after a lapse of seventy six years with all the lights we now have, aided by improved implements.

I am now in my seventieth year, and when old enough to run at large over the farm, by playing truant from my book and the bunch of golden willow rods, passed most of my time when the work was going on, riding one of the plough horses to and from the field.

In those days labor was plenty, and the wheat crop was raked in after the plough, to be sure that every grain was covered about the corn stalk, for in those days there was no fallow, the land being worked on the three fields system, and improved lots in tobacco, which was then the staple of farmers, where all the farm yard manure was applied to the improvement of the fields.

Wheat was then sowed early, before the fodder was gathered from the corn stalks, each horse being muzzled to prevent injury to the crop; at corn gathering from the field, a small boy had to be posted before the oxen to keep them still, while others were loading the cart, the wheat being very tempting, then affording a very good bite.

I have wandered from my first intention, which was only to put you in possession of the enclosed paper, to compare the Eastern Shore of Maryland with Delaware, if Major Jones goes back to the same period of time. You can make such comments as you may deem useful, without using my name, and file the memorandum with your antiquities. We have had a most unusual season for the growth of vegetation, since the rains commenced; the corn has never suffered, a gentle shower being bestowed on the land when needed; the crop will be a very full one. I will not encroach more on your time, which can be so much better employed.

We thank our correspondent for his letter and the enclosed memorandum, and hope he will favor us further with those suggested in his postscript. We should have been better pleased, had he not debarr'd us the use of his name.

The memorandum is an interesting relic, showing the product of a crop of wheat made in Talbot county in the year 1774—1086 bushels from 74 of seed, or 14½ to one of seed. Our correspondent says truly, it is doubtful whether Talbot county or any other county of the State, can with all our boasted improvement show such an average to the seed sown—certainly not on corn lands. The memorandum dates before the inroad of the Hessian fly, when wheat might be, and as our correspondent shows, was sown long before the 10th October, which is now the earliest time at which some of the most judicious wheat growers of Talbot county think it safe to begin seeding. Perhaps the fly is a less formidable enemy on the Western Shore, but some of our best farmers on this side of the Bay think they make their wheat fly-proof by giving it an early chance to strike its roots into the ground; and at the same time give it much greater insurance against winter-killing and rust. Early seeding is growing into favor.—Ed. Far.

CROPS OF FREDERICK COUNTY, VA.

We conversed a few weeks since with a highly intelligent farmer of *Frederick county, Virginia*, who gave it as his candid opinion that the wheat crop of that county, would not prove more than one-third of an average one, and his opinion was based upon much personal observation, and free conversations held with gentlemen whose opinions and statements were entirely reliable. He, himself, had 400 acres in wheat, and had personally attended the threshing of a field of 80 acres, the product of which was but 400 bushels. Last year on land of similar character, the average produce was 24 bushels to the acre—a considerable portion of his fields yielding 27 bushels to the acre. He estimated that his crop this year would be short about 3200 bushels.

He stated to us, also, that a neighbor of his who had 600 acres in wheat—a gentleman esteemed among the best farmers in that county—had threshed out 100 acres of his crop, the yield of which was but 600 bushels, and this is land universally admitted to be among the best wheat lands in the State.

The *oat crop* he stated was good; but that great loss has been sustained from the rains during harvest.

The prospect of a large corn crop was excellent, and if no unforeseen accident should occur, must turn out a very large yield.

The very interesting paper of Mr. Stabler was intended for our September No., but did not reach us in time. The country is indebted to a Maryland mechanic for the first effective and as yet unsurpassed Reaper, and we are happy to announce that a Maryland mechanic has now perfected a Raking attachment, which is entirely original, and remarkably simple and complete. Our friend A. B. Davis, Esq., of Montgomery Co., who witnessed the operation of this rake during the past harvest, in connection with one of Hussey's Reapers, fully corroborates Mr. Stabler's estimate of it.

Mr. Stabler's notice of the Baltimore and Ohio Railroad, is a well deserved tribute to one of the greatest enterprises of this or any other day. His estimate of crops will be read with interest.

THE PRUNE.—There have recently been imported from France the cuttings of several varieties of the prune which have been distributed in Maine, Vermont, N. Hampshire, Northern N. York, Michigan, Wisconsin, Minnesota, and several points on the Alleghany Mountains, to be engrafted on the common plum tree. Why these places have been selected is in consequence of the absence, or comparatively few curculios in these regions. In most other parts of the United States, this insect is a great bane to the plum trees, and often cuts off the entire crop. From the coolness of the climate in Maine, and almost entire absence of this insect, it is the opinion of good judges that this State is capable of producing a sufficient supply of prunes for the whole consumption of the Union.—*Union.*

THE CORN COB AND THE HUSK OR BRAN OF WHEAT.

The high prices of grain are teaching useful lessons of economy. Never before has there been such demand for the valuable machines made for grinding the corn cob with the grain. We receive constant assurances of the value of the food thus prepared, and have no doubt the use of these machines will become so general, as to effect an immense saving of food. All the facts connected with the consumption of the corn cob, indicate an intrinsic value entirely independent of the preparation by the machine.

We wish to call attention to another article, which is estimated far below its real value. One which more concerns consumers generally than the farmer, but which it becomes every intelligent farmer to understand—we mean the *husk* or *bran* of wheat. Prof. Johnston in his *Chemistry of Common Life* has the following:

"The bran or husk of wheat which is separated from the fine flour in the mill, and is often condemned to humbler uses, is somewhat more nutritious than either the grain as a whole, or the whiter part of the flour. The nutritive quality of any variety of grain, depends very much upon the proportion of gluten it contains; and the proportion of this in the whole grain, the bran and the fine flour respectively, of the same sample of wheat is very nearly as follows:

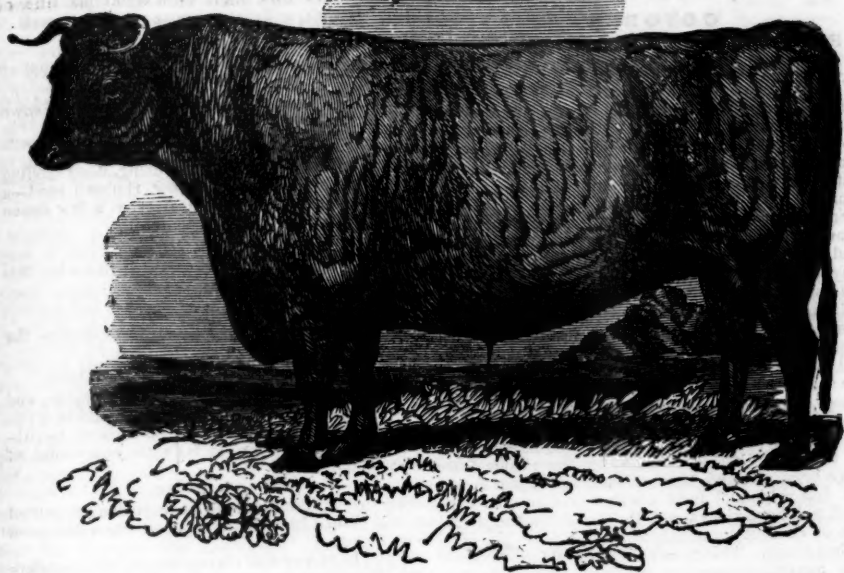
Whole bran (outer and inner skin)	14 to 18 per ct.
Whole grain	12 per ct.
Fine flour	10 per ct.

The whole meal obtained by simply grinding the grain, is equally nutritious with the grain itself. By sifting out the bran, we render the meal less nutritious, weight for weight; and when we consider that the bran is rarely less, and is sometimes more than one-fourth of the whole weight of the grain, we must see that the total separation of the covering of the grain, causes much waste of wholesome human food. Bread made from the whole meal is therefore more nutritious; and as many persons find it also a more salutary food than white bread, it ought to be more generally preferred and used.

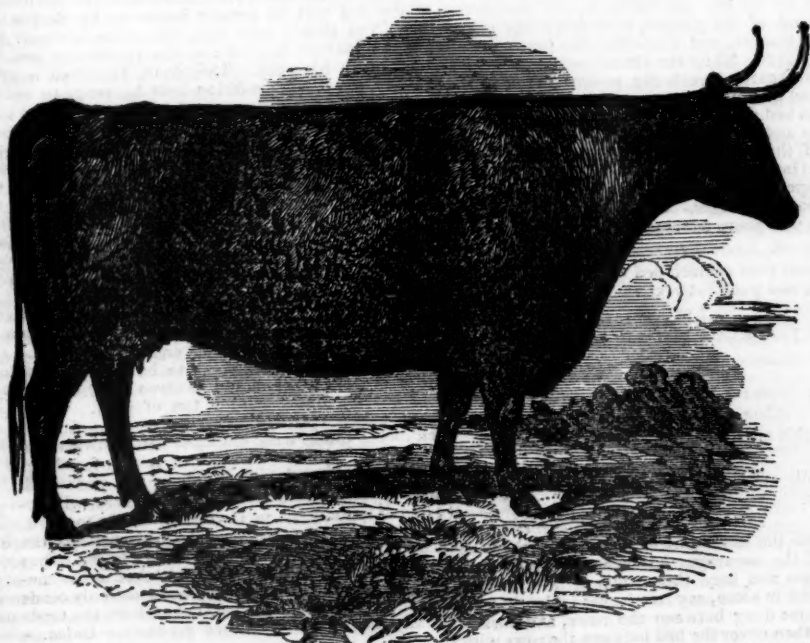
The gluten of the husk resides chiefly in the inner covering of the grain. Hence the outer covering may be removed, without sensible loss of nutriment, leaving the remainder both more nutritious than before, weight for weight, and also more digestible than when the thin outer covering is left upon the corn.

An ingenious American instrument has been patented, by which the removal of the outer covering is said to be completely effected without injury to the bulk of the grain."

MANGE IN CATTLE.—The disorder termed the mange arises from the excitement of the skin, probably brought on by disarrangement of the organs of digestion in consequence of poverty, engendered by hunger and want of shelter. After these are supplied, a wash made of gunpowder and water—charcoal, nitre and sulphur—will be found a valuable application. Mange is an infectious disorder; remove therefore the sick beast from the rest of the herd.—[*Boston Cultivator.*]



Devon Bull, **PLOUGH BOY**, property of the late C. P. Holcomb, of Delaware



Devon Cow **"CHEERY,"** property of the late C. P. Holcomb, of Delaware.

WORK IN THE GARDEN.**OCTOBER.****SETTING OUT PLANTS FOR EARLY CABBAGES.**

Preparation of the Bed.—Influenced by the desire of putting you in the way of securing for your family a supply of cabbages for early use next summer, and throughout the summer, we advised you last month to sow small quantities of various kinds of cabbage seed which we then named, with the view of raising plants to set out this month. If you appreciated the advice which we then gave and sowed the seed, those plants are now nearly ready to be transplanted, and as we promised when the proper time arrived to point out the way in which the bed should be prepared, and the plants set out, we shall now fulfil our promise.

In the first place select a loamy, dry bed, well exposed to the South, manure it highly, for cabbages require to be liberally fed, dig in the manure a full spade in depth; let the spadesman rake fine as the spading progresses. The spading and raking being completed, stretch a garden line east and west, 2 feet from the edge of the bed, elevate the line 4 inches high, then with a hoe form ridges up to the height of the garden line; your first ridge being formed, remove your line 3 feet from the first ridge and form another, and so continue until you have ridged out the bed. On the north side of each of these ridges set out your plants 6 inches apart. This closeness is necessary to provide against destruction by frost. Towards the latter part of November, place stable manure along the line of the plants; this will afford protection through the winter. In the Spring, as soon as the frost is out of the ground, haul down the ridges over the manure, and thus effect the first working of the plants. Thin the plants out in about two weeks thereafter, work the ground between the rows, and give the plants a moderate hilling; then give the bed a pretty free dusting with a mixture of ashes and plaster, 6 parts of the former and 2 parts of the latter. Cultivate them twice afterwards at intervals of two weeks apart; water them in dry spells, and you cannot fail to have a fine bed of early cabbages. One or two waterings with *soapsuds* will prove advantageous.

SPINACH.

Thin out your spinach bed so as to stand 4 inches apart, and weed between the rows and plants.

LETTUCE.

Weed your lettuce plants that you set out for heading.

ENDIVES.

Tie up these for bleaching.

CAULIFLOWERS—BROCCOLI.

Early this month earth up and work these.

CABBAGES.

Carefully weed and earth up your advancing cabbages.

ASPARAGUS BEDS.

Towards the latter part of this month when the stalks of the asparagus has become yellow, cut them down and burn them; this done weed the plants, fork in some, say two inches in depth, well rotted horse dung between the rows, and fork it well in; then cover the bed between the rows with the same kind of manure, 2 inches in depth. Early next Spring fork this manure in carefully, so as not

injure the crowns of the heads, and broadcast over the bed a mixture comprised of equal quantities of salt and ashes, sufficient to cover the earth well.

CELERY.

Earth up your celery for bleaching.

SMALL SALLADING.

All kinds of small sallading may still be sown on warm borders.

RHUBARB OR PIE PLANT.

Prepare a bed by liberal manuring, deep spading and thorough raking, and sow rhubarb seed—a small part of a border will answer, as a few dozen plants will supply even a large family.

HORSE RADISH.

Prepare a moist bed and plant it out with this most excellent and healthful root.

ROOTS.

Dig these up and store them away before the frost injures them.

RASBERRIES, GOOSEBERRIES, CURRANTS.

Transplantations of these can now be made, and here let us remark, that no garden should be without them, as they are each as luscious as healthful, and contribute so much to the enjoyment of one's family.

GENERAL WORK.

See that all the weeds in your garden are pulled up, and placed in a pile to dry, and when dry, have them burnt.

If you have any stiff clayey beds in your garden, have them dug up and left in the rough. This done, give them a free dusting of freshly slaked lime. Between the frost and the lime, the texture of the soil will be greatly improved by Spring, when you should rake fine, then manure freely, dig the manure in; rake as the spadesman proceeds with his work. This done, your bed in a greatly improved condition will be ready to receive any crop you may intend for it.

THE CAROB TREE, OR ST. JOHN'S BREAD.

Among the recent importations of seed from Alicante, Spain, were those of the Carob tree, the pods of which, when ripe, contain a few drops of a substance resembling honey. From this circumstance, it is supposed that this tree is identical with the one upon which St. John fed while in the wilderness, and hence sometimes it is called St. John's bread. It blooms twice a year—at the end of January, or the first of February, and about the middle of September, and when well watered, grows to a considerable height and size, sometimes spreading to such a degree as to have a circumference of from two hundred to three hundred feet, and bearing upwards of a ton of pods. Young trees, only a year old, often have stems eight or ten inches thick, with branches ten or twelve inches thick, with branches ten or twelve feet long. Cattle, horses and mules, devour the pods with great avidity, and if well fed upon them, will become extremely fat, or in good condition to work. This tree, doubtless, will succeed well in the southern, and perhaps in the middle States. Thus it is that the interest government takes in the success of the science of agriculture, not only tends to improve science at home, but collects the seeds of all climes to swell its own products.—*Union.*

Always give the soil the first meal. If this is well fed with manure, it will feed all else; plants, animals, and man.

DOWNING ON PRUNING.

"Pruning to 'promote growth or modify the form of Fruit Trees.'"

"In the country almost all fruit trees are grown as standards. In this way they develop their natural forms, attain the largest size, and produce the greatest quantity of fruit with the least possible care. Our bright and powerful sun, reaching every part of the tree, renders the minute systems of pruning and training, which occupy so large a portion of the English works on this subject of little or no moment to the cultivator here. Pruning is, therefore, commonly resorted to only for the purpose of increasing the vigor of feeble trees, or to regulate and improve the form of healthy and luxuriant trees."

"Pruning has the power of increasing the vigor of a tree in two ways. If we assume that a certain amount of nourishment is supplied by the roots to all the branches and buds of a tree, by cutting off one-half of the branches, at the proper season, we direct the whole supply of nourishment to the remaining portion, which will, consequently, grow with nearly double their former luxuriance. Again, when a tree becomes stunted or enfeebled in its growth, the thinness of its inner bark, with its consequent small sap-vessels, (which it must be remembered are the principal channels for the passage of the ascending supply of food) renders the upward and downward circulation tardy, and the growth is small. By heading back or pruning judiciously, all the force of the nourishing fluid is thrown into a smaller number of buds, which make new and luxuriant shoots, larger sap-vessels, and which afford a ready passage to the fluids, and the tree with these renewed energies will continue in vigor for a long time."

"This treatment is especially valuable in the case of small trees of feeble or stunted growth, which are frequently cut back to a single bud, and a new shoot or shoots, full of vigor, gives a healthy habit to the tree. In the nurseries, the practice of heading down unthrifty trees is frequently pursued, and small orchard trees which have become enfeebled, may be treated in the same manner; cutting back the head as far as the place where it is wished that new shoots should spring out. Older trees should be headed back more sparingly, unless they are greatly enfeebled; and their roots should at the same time be assisted by manure."

"A judicious pruning to modify the form of our standard trees is nearly all that is required in ordinary practice. Every fruit tree grown in the open orchard or garden as a common standard, should be allowed to take its natural form, the whole efforts of the pruner going no further than to take out all weak and crowded branches; those which are filling uselessly the interior of the tree, where their leaves cannot be duly exposed to the light and sun, or those which interfere with the growth of them. All pruning of large branches in healthy trees should be avoided by examining them every season, and taking out superfluous shoots while small. Mr. Cox, the best American author on fruit trees, remarks very truly, 'when orchard trees are much pruned, they are apt to throw out numerous (superfluous) suckers from the bough in the following summer; these should be rubbed off when they first appear, or they may easily be broken off while young and brittle—cutting is apt to increase their number.'"

"Where pruning is not required to renovate the vigor of an enfeebled tree, or to regulate its shape

—in other words, in the case of a healthy tree which we wish to retain in a state of the greatest luxuriance, health and vigor, it may be considered worse than useless. Bearing in mind that growth is always corresponding to the action of the leaves and branches, if these are in due proportion, and in perfect health, the knife will always be found rather detrimental to luxuriance and constitutional vigor than beneficial."

"The best season for pruning to promote growth, theoretically, is in autumn, soon after the fall of the leaf. Next to this, winter pruning performed in mild weather is best, and in orchards this is the season usually most convenient. In all parts of the country where the winters are not very severe, (and always in the Southern and Western States,) the roots are collecting a certain stock of nourishment during the whole autumn and winter. When a tree is pruned in autumn or winter, this whole supply goes to the remaining branches, while in the case of spring pruning it is partly lost. North of the 43° of latitude, however the winters are so severe that winter pruning should be deferred till the last of February."

"We should especially avoid pruning at that period in spring, when the buds are swelling, and the sap is in full flow, as the loss of sap by bleeding is very injurious to most trees, and in some brings on a serious and incurable canker in the limbs."

"There are advantages and disadvantages attending seasons of pruning, but our own experience has led us to believe that, practically, a fortnight before midsummer is far the best season, on the whole, for pruning in the Northern and Middle States. Wounds made at this season heal over freely and rapidly; it is the most favorable time to judge of the shape and balance of the head, and to see at a glance which branches require removal; and all the stock of organizable matter in the tree, is directed to the branches that remain."

"In pruning large limbs, some composition should always be at hand to cover the wound. This will not only prevent its cracking by the cold in winter pruning, but will keep out the air, and maintain the exposed wood in a sound state, until it is covered with a new layer of bark. Many compositions have been in fashion abroad, for this purpose, which under our summer sun, and wintry frosts, are nearly worthless, as they generally crack and fall off in a single year. The following is a cheap and admirable application, which we recommend to all cultivators of fruit trees."

COMPOSITION FOR WOUNDS MADE IN PRUNING.

"Take a quart of alcohol and dissolve in it as much gum shellac as will make a liquid of the consistence of paint. Apply this to the wound with a common painter's brush; always paring the wound smoothly first with a knife. The liquid becomes perfectly hard, adheres closely, excludes the air perfectly, and is affected by no changes of weather; while at the same time its thinness offers no resistance to the lip of new bark that gradually closes over the wound. If the composition is kept in a well corked bottle, sufficiently wide mouthed to admit the brush, it will always be ready for use, and suited to the want of the moment."

Learn as much as possible the experience of the skilful; the man who depends on teaching himself will be likely to receive very poor lessons,—or, as Dr. Franklin has it, he will find "he has a fool for his master."

George Page & Co.'s Portable Circular Saw Mills.

We are pleased to learn from the annexed article that Messrs GEORGE PAGE & CO., of this city, have obtained an extension of their Patent for their Portable Circular Saw Mills, for seven years from the 16th of July last.

[From the American Mining Chronicle, Iron Manual and Railway Journal.]

PORTABLE CIRCULAR SAW MILLS.—We learn that George Page's Patent for Portable Circular Saw Mills, was extended on the 14th of July last, for a period of seven years from July 16th, 1855.

Page's machine has occupied, since its introduction, the most important position in the preparation of lumber, and is in general use in all parts of the country. In fact, parties engaged in the lumber business would find it very difficult, if not impossible to get along without it. We are therefore very much gratified to see that the ingenuity of the inventor has received the substantial benefits of the extension, in no case better merited.

Like all other standard inventions, these saw mills have been extensively pirated, and manifold have been the losses and much the trouble caused to the inventor thereby. We are no advocates of generally of any sort of monopoly, but certainly the extent and variety of the vexations and losses resulting from these piracies, deprive the present extension of any improper characteristics, and reduce it to the level of a bare act of simple justice.

FLORICULTURE—FOR OCTOBER.

Prepared for the American Farmer, by John Feast, Florist.

The season has arrived when every preparation should be made for the removal of all plants into their winter quarters, those that will not stand the severity of the weather, and such as are less hardy, can be protected in cold frames, suitable for their reception without fire heat—only by careful covering, or protection to keep off the frost. If plants can be kept without artificial heat, they generally do better, and flower stronger than when excited, at the time they should be dormant; but if a succession of bloom is wanted, forcing must be resorted to, which generally weakens the plant to bring on bloom prematurely. This process is resorted to by the commercial growers of plants, but very little is obtained in the end, only to destroy the plants and make room for others after they have done flowering, and reserving a young stock for the following season, which of soft wooded plants—young plants are always preferable to keep over till another year, and if due attention is given them. They are always large enough to flower, besides kept in a healthier condition, and make a finer appearance than an old stunted plant.

Dahlia.—The first severe frost will destroy the tops and roots, they should be taken up on a fine dry day, and placed in a cellar, then put away in a proper place for the winter.

Pelargoniums will soon require to be removed to the greenhouse as well as all other plants. Cuttings that are rooted, pot off, and all that require it, and resort to proper drainage.

Roses planted out in the borders during the summer, should be taken up now and repotted, also layers that are rooted, and likewise young cuttings placed in a shady cold frame, till they are established, and about the latter end of the month hardier kinds may be removed.

Chrysanthemums put in the house before the cold weather, lest the buds are injured, which destroys the bloom; place them as near the glass as convenient, and give plenty of air. *Verbenas*, take up and repot; put in cuttings for a young stock.

Fuchsias that have done flowering, place under the stage, and be careful of too much water.

Achemenes and **Gloxinias** give less water, as the foliage begins to decay.

Greenhouse plants of all kinds repot, if growing out of doors, and prepare for removing into their proper winter quarters.

ANNUAL EXHIBITION OF THE MONTGOMERY COUNTY (MD.) AGRICULTURAL SOCIETY.—This exhibition was held at Rockville, on Thursday, September 11th. The day was exceedingly pleasant, and the attendance very good. The farmers and other citizens of Montgomery, the National Intelligencer says, with their wives and sons and daughters, came forth in goodly numbers; and from Washington, Georgetown, and the adjacent counties of Maryland there were many visitors. A square and commodious enclosure had been prepared for the occasion, pens along two sides of it being constructed for the reception of the horses, neat cattle, poultry, &c., while in the central portions was the display of agricultural implements and machinery for farming and domestic purposes; and, in a series of tents, the contributions of the products of the farms and gardens, and of the skill and taste of the ladies of the country, whose dairy products, good housewifery, and accomplishments in every thing useful and creditable to the wives and daughters of thrifty and enlightened American farmers, won the praise of all who beheld them. Addresses were delivered by the Hon. Andrew Stevenson, of Virginia, Geo. Washington Parke Custis, Hon. R. J. Bowie, and Thomas P. Davis, Esq.

BALTIMORE MARKET.—OCTOBER 26.

The Flour and Grain market is to-day rather dull, dealers probably waiting for foreign advices, hourly expected. Sales of Flour, Howard street and City Mills, ruled at \$7.87—Wheat, choice white, 1.35 a \$2; good to prime 1.85 a \$1.39—ordinary to good 1.70 a \$1.60—inferior 1.50 a \$1.60—red wheat, good to prime 1.80 a \$1.85; ordinary to good 1.65 a 1.75, inferior 1.40 a \$1.50—Corn, prime white and yellow 88c., inferior, cut, &c., 78 a 82—Oats, good to prime 35 a 40c., for Md., Pa. and Ohio; inferior 29 a 33c.—Rye, Md. 1.08 a \$1.08, Pa. 1.15. Western Va. 1.10 a \$1.12—Whiskey, Baltimore, in bbls. 38 a 38½c.; Ohio 39 a 39½c.—Timothy Seed 4.25 a 4.50—Cloverseed \$7.25 a 7.50, Flaxseed 1.65 a 1.70—Rice 5 1-2 a 6c.—Molasses, N. O. 39 a 40, Porto Rico, 39 a 40c.—Guano, Peruvian \$35 a 50 per ton of 2240 lbs.—Mexican, A.A. \$27, inferior qualities from \$14 to \$25—Hay, prime baled 25 a 27 per ton, loose 22 a 25—Plaster 1.35 a 1.57 per bbl. for ground, and \$3 a 3.25 for lump—Sugar, Porto Rico, \$8.12 a 8.75, Cuba 7.25 a 8.70, and N. Or. 7.25 a 8.70—Tobacco, has been dull during the week past, in consequence of the advance in price of freights, and it is said orders from Europe have for the present been countermanded, partly from this cause, and partly from the near approach of the new crop delivery—quotations are nominal, tho' no change is made in prices for the last week.

The New York Express, of Saturday evening says:

"The discussions as to the amount and value of our crops of grain, have lost about all their interest from the general conviction now—that prices here are to be regulated by the demand abroad. The freighters are so convinced of that, that they put up freights—and increased vigor is giving to ship-building. Maine is putting up new ships in all directions. We are likely to be in the old difficulty, however, of good remunerative prices abroad—with too costly freights to pay for the expense of sending the products there."

Maryland State Agricultural Society.

THE Annual Meeting will be held in the Hall of the Society, on Monday, 29th October, at 7 o'clock, and be continued through the week.

By order, SAMUEL SANDS, Secy.

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GUANO ON PLASTERED LAND, &c.—The opinion of Henry Fitzhugh, Esq., one of the very best practical farmers in Stafford, is that Guano will act less beneficially on land that has been plastered than where such application has not been made.—Mr. F. has brought his farm into a high state of cultivation by plaster and clover, but was induced to make an experiment with Guano last Fall. His experience thus far has been, that the expenditure of money and labor in making the application of this new fertilizer has been entirely thrown away. This is an important question, and we trust that others who have made like tests, will give the public the benefit of their experience.

We learn from gentlemen in various parts of the country, extending from Madison down to Caroline, that the benefits of guano were never before so highly apparent as at this time. Where guano was applied last fall the wheat crop was pushed ahead, and in many cases luxuriant fields of living green are found, whilst on broad acres adjoining, where no guano was sown, no wheat will be made, or at least scarcely the seed be gathered, judging from present appearances.

It seems to be a conceded point that early seeding, with guano, will give wheat such a start as to keep it in advance of the successful attacks of the joint worm.—*Frederick Herald.*

RULE FOR BUTTER MAKING.—The Massachusetts Committee on Dairies says:—Your Committee having had much experience in butter making, offer the following rules as the result of their experience:

The newer and sweeter the cream, the sweeter and higher flavored will be the butter. The air must be fresh and pure in the room or cellar where the milk is set. The cream should not remain on the milk over thirty-six hours. Keep the cream in tin pails or in stone pots, into which put a spoonful of salt at the beginning; then stir the cream lightly every morning and evening; this will prevent it from moulding or souring; churn as often as once a week, and as much oftener as circumstances will permit. Upon churning, add the cream upon all the milk in the dairy. Use nearly an ounce of salt to a pound of butter. Work the butter over twice to free it from buttermilk and brine, before lumping and packing. Beware that it is entirely free from every particle of buttermilk, and it will keep as long as desired. In Scotland, a syphon is sometimes used to separate the milk from the cream, instead of skimming the pans."

U. S. AGRICULTURAL SOCIETY.—Hon. Robert C. Winthrop, chairman of a committee of the Massachusetts Society for the promotion of Agriculture, has sent to Hon. Marshall P. Wilder, President of the United States Agricultural Society, one thousand dollars to aid in defraying the expenses of the grand exhibition which is to be held in Boston this month. The citizens had previously contributed \$20,000.

VALUABLE TRACT OF LAND FOR SALE.—We would call attention to the sale advertised on another page by W. W. Glenn, Esq., of Curtis' Creek property. The location of these lands, and the improvements contemplated in the neighborhood, render them an object worthy of the particular attention of Capitalists, as also of those desirous of obtaining well located market and fruit farms.

The following communication from M. Tilghman Goldsborough, Esq., was intended for our September No., but the writer not being able to forward it to us in time, at the request of some of his neighbors who were anxious to avail of his experiments, published it in the *Easton Gazette*. We now present it to our readers, with some additions by Mr. Goldsborough:

EXPERIMENTS IN THE PROPAGATION OF WHEAT.

In the summer of 1854, the Board of Trustees of the Maryland Agricultural Society for the Eastern Shore invited the State and County Agricultural Societies of Maryland to unite with them in offering a premium for the best set of experiments designed to ascertain the comparative effects of growing wheat in four different modes, to wit:

No. 1, in drills on a level surface.

No. 2, in drills on a ridged surface, lengthwise the ridges.

No. 3, broadcast on a level surface.

No. 4, broadcast in narrow ridges, (the old mode of this country.)

Although no further action was taken upon the subject by the said Societies, and therefore no premium offered, yet I made the experiments; and having carefully conducted them to a final result, offer a statement of them, with all the material facts and circumstances for publication.

The ground selected was in a field of about sixty acres, which in the five field rotation was that year in clover of one year's growth succeeding corn ground wheat, and had been grazed off, and in the latter part of July, and first of August had been flushed flat in breadths of sixty feet, and to a depth of 6½ to 8½ inches, and immediately rolled and harrowed. As the ground remained free from grass in consequence of the great drought then prevailing, it received no further cultivation until late in September, when again it was harrowed and rolled. Sixteenth breadths of sixty feet each, and varying in length from 643 to 682 feet, containing an average of about nine-tenths of an acre, were taken for the experiments, and were put in wheat in each of the said modes alternately, and therefore there were four examples of each mode, and thus error from unequal fertility of soil was as far as possible avoided.

On the 11th and 12th of October the wheat was put in. There was no application of manure or any fertilizing matter, for fear of irregularity in the quality, or rate of such application.

At one end of the sixteen breadths, the ground is higher or light—a grey colored loam of a yellow clay subsoil, and productive of corn, wheat or clover; and at the other it is white oak and flat. A narrow belt of land inclined to heave out wheat in frosty weather, subdivides to a considerable extent the light and stiff portions. All of the land had in former years been well dressed with shell marl. I consider the whole of it to be good land, but not highly fertile. The wheat was of the variety known as the Gale or Golden straw, or Golden flint. The drilling was at the rate of one bushel and seven-tenths of a bushel per acre—the broadcasting at the rate of two bushels per acre.

For No. 1, there was no additional cultivation previous to the drilling after the last mentioned rolling and harrowing.

For No. 2, the ground was ploughed into oval

shaped ridges by a three furrow plough, one-half being made into ridges, 5 feet 3 inches wide (the width of the drill,) and drilled with all the seven tines or tubes of the drill, and the other half was made into four feet ridges by the same plough and drilled with five tines, the two outer tines being hooked up and closed. The drills were nine inches apart.

No. 3, was sowed by hand, very regularly, upon the ground as left by the last named harrowing and rolling, and was ploughed in flat by three furrow plough, in lands 60 feet wide.

For No. 4, the ground, as left by the last named harrowing and rolling, was marked or laid off into 4 feet lands by a small single plough, after which the wheat was sowed by hand and ploughed in by throwing the land into four feet ridges with a three furrow plough, in which operation the hinder plough was run in the furrows made by the above mentioned single plough, and therefore the wheat grew well into the furrows subdividing the ridges.

The ground being in fine tilth, the broadcast wheat was not harrowed or rolled after being ploughed in. The drilled wheat came up first by some days, and was greatly superior to the broadcast throughout the whole period of growth, so much so, that until the broadcast wheat became high enough to hide the ground, it disguised the appearance of the field even when viewed from a considerable distance.

Throughout the winter and spring the drilled upon a level surface was superior to that drilled upon the ridges;—and the drilled on five feet ridges was superior to that on four feet ridges, and during the winter and early spring, the drills that were near the tops of the ridges were red, and quite inferior to those on the sides and near the bottoms of the ridges.

In the narrow belt above mentioned, the broadcast wheat was entirely thrown out and destroyed by frost, but the drilled wheat in the same, survived the winter.

In order to secure complete accuracy in keeping the different lots separate and distinct, both in the harvesting and threshing,—they were not harvested until all the other wheat in the field was cut and shocked; and the cutting of the experimental lots was done by two harvesting machines with a separate gang of binders attending each machine; and while one machine was cutting one lot, the other was cutting another, which enabled me to keep the different lots entirely distinct and separate. This wheat was not threshed until all the other wheat on the farm had been threshed and put in the garners. The thresher used was a Wemple machine sold by the Messrs. Pennock, of Wilmington, Del., which is a thresher and cleaner. After the threshing of each lot, the ground around the machine was swept clean, and the whole yield of each lot was put in a separate pile in the barn, where it remained undisturbed until it was fanned, measured, and weighed.

acres. bus.	weight.	rate per acre, by measure.	by weight 60 lbs.
No. 1 54-100/20½	64 lbs.	19 93-100	21 23-100
No. 2 66-100/50	64½ "	13 98-100	14 92-100
No. 3 57-100/32	63 "	10 92-100	11 82-100
No. 4 63-100/32	59½ "	7 73-100	7 65-100

The difference in product between the drilled and broadcast would probably have been less, if the winter weather had not have been so unusually severe, and if a harder variety of wheat than the Gale had been used, and also if there had been no land inclined to heave out, embraced in

the ground selected. But the experiments show clearly that drilling as in No. 1 is vastly the most safe and reliable mode; and it is fairly to be inferred from them, that in any season and in land of average quality and description, a valuable excess of product may be expected from drilled wheat over broadcast, of which indeed I had been entirely convinced by the experience of the previous six years in which the white blue stem wheat was principally observed.

As the publication of these experiments may induce some farmers to purchase wheat drills, I deem it proper to remark, that in rather extensive observations I have not seen so great a superiority of drilled wheat over broadcast where the drills were made closer than 9 inches. The slopes of such drill furrows are too steep, at least for this latitude, and therefore they fill up so rapidly by the action of rain and frost as to partially smother the wheat; and as they become level, or nearly so, by the end of winter, the wheat loses the benefit of being in a furrow or trench, a position which appears to be of all others the most genial to its growth. M. T. GOLDSBOROUGH, ELLENBORO, near Easton, Aug. 28, 1855.

FOUNDER.—Take a table-spoonful of pulverized alum, pull the horse's tongue out of his mouth as far as possible, and throw the alum down his throat; let go of his tongue and hold up his head until he swallows.

THE LITTLE GIANT PATENT CORN & COB MILL.

We would call the attention of the farming community, or those who have stock to feed or fatten, to the above mill, confident that all who consult economy, and practice good husbandry, will avail themselves of the use of an implement, the merits of which, has been tested by leading Agriculturists throughout the Union. "The Little Giant," quoth one of our townsmen, "is no Yankee tool, but begotten in the South-west, at St. Louis, Missouri, born and bred in the biggest corn field of the biggest corn, of the great American bottom—hence its natural proclivity and rapacity to chaw up ear corn and to do things wholesale after the western fashion." We notice in the Agricultural papers from that quarter, and all along shore, that the Little Giant has ground its way from the Mississippi to the Atlantic, taking the first premiums at State and County Fairs, and *Mechanic's Institutes* of Missouri, Illinois, Indiana, Kentucky, Ohio, Pennsylvania, Carolinas, Virginia, Georgia, N. Jersey and Maryland, and has now got right among the down easters, masticating the hard, flinty corn of that country to their infinite delight and satisfaction.

An Agricultural Improvement of the South-west, that the invention and skill of the East acknowledges superior to any thing of the kind got up, and is sought after by the intelligent, discerning farmers of that region, must have substantial merits. Indeed, to commend itself to those who are so well qualified to judge, who from their circumstances and education, are led, if not compelled to practice an economy in all the operations of the farm, which would appear with us to amount almost to stinginess, must combine advantages that adapts it in the highest degree to meet the purposes intended.

Messrs Robbins & Bilbb, of the Baltimore Store House, 39 Light Street, we understand, have the patent right for some ten or a dozen States. oct1

CHAMPION CORN AND COB CRUSHER AND GRINDING MILL.



THE above Figure is a correct representation of Maynard's recent invented COB AND CORN MILL, which differs materially from similar machines of the kind. The principal novelty is the grinding process, which is on the Screw or Spiral principle, causing a regularity and uniform process of grinding, producing very slow wear on the burrs, and the finest quality chop for feeding stock. CORN can be ground with this machine with equal facility as Corn and Cob, full one-half of which will be fine Corn Meal, the remainder fine enough for feeding Stock; or, by a second process, all may be reduced to fine meal.

We are now manufacturing the article extensively, and hope to be able to supply all orders that we may be favored with.

PRICE, - - - - - \$40 00
" with reception Box and Sills, - - - - - 45 00

NOTICE.—Application has been filed in the Patent Office for a patent for said principle of grinding, and manufacturers are notified accordingly.

Oct. 1.

R. SINCLAIR, Jr. & CO., Manufacturers.

RICE & NORRIS, AGRICULTURAL IMPLEMENT, MACHINE AND SEED STORE, Nos. 46 and 48 Light Street, near Pratt, BALTIMORE, MD.,

Respectfully tender their most grateful acknowledgements to their friends and customers for the liberal patronage bestowed upon them. They feel more than encouraged from the past, and kind indications of future favors from Maryland, Virginia and North Carolina, to keep a general and complete stock of all articles in their line, and to suit the wants of the Agricultural communities, all of which they will sell on as good terms as they can be purchased in this market.

Our present large and extensive stock comprise in part the following, viz:—HORSE POWERS and THRASHING

MACHINES, WHEAT DRILLS, with or without Guano and Grass Seed attachments of Pennock's, Bickford & Hugman's and Moore's make; very superior HAY PRESSES, to pack from 150 to 300 pounds to the bale; Hickok's Portable Cider Mill and Press, Straw, Hay, Fodder and Stalk Cutters, Corn Shellers, for hand or horse power; Vegetable Cutters, Montgomery's Rockaway WHEAT FAN, also VANWICKLE EXCELSIOR FAN; Ploughs of every description, including Prouty & Mears', Woodcock's, and Beache's Iron Beam Plough; Harrows of the various kinds, Cultivators, Potato Diggers, Spades, Shovels, Molton's Grub Hoes, Picks, Axes, Hatchets, &c. Mortising Machines, Harrison's Portable Mills, Sausage Meat Cutters and Stuffers, Saw Cutters, Scott's Little Giant CORN & COB CRUSHERS, Thatcher's double action Force Pump. Agents for Herring's champion Fire and Burglar proof Safes. Purchasers will please call and examine our stock.

RICE & NORRIS,
46 and 48 Light Street, Baltimore.

oct1

To the Agricultural Community.

A communication having appeared in the "American Farmer" of the last month from Dr. Piggot, relative to the value of

"COLOMBIAN GUANO."

Wherein he attempts to show that by his analysis and his deductions therefrom, that article is in no wise superior to the Mexican Guano.

Having, in connection with the house of Messrs. Whitelock & Co., of this city, purchased the cargoes of this Guano which have been brought to this market, and believing that Dr. Piggot's opinions are entirely erroneous and at variance with those expressed by some of the most eminent Chemists in the country, as well as by intelligent farmers who have used the article, we feel that our interests demand some notice of his card.

We beg leave, without further comment, to submit the following card from Dr. David Stewart, Chemist, of this city, and to append the names of some of the practical farmers who purchased the Colombian Guano last spring, and applied it with the greatest effect on Corn, Oats, Buckwheat, &c., and who are largely increasing their orders this fall for the same description.

We would also remark that we have in our possession analyses of this Guano made by Professor Booth, Analytical Chemist of the U. S. Mint, Philadelphia, and of A. A. Hayes, Esq., State assayer, Boston, Mass., who entirely agreed with Dr. Stewart in his opinion respecting the extraordinary fertilizing qualities of the COLOMBIAN GUANO.

P. MALCOM & CO.,
Bowly's Wharf, Baltimore.

Messrs. P. Malcom, & Co., Baltimore:

Gentlemen—Your favor of this date directing my attention to an article from the pen of Dr. Piggot in the last number of the "American Farmer" is at hand.

I can only reiterate my opinions of the great value of this extraordinary guano.

That it is a super-phosphate, I will prove, (if you desire further proof) in the next number of the "American Farmer," and will show that the analysis published by Dr. P. (to discredit my statements) may be perfectly correct without conflicting in the least with the opinions of Professor Booth and myself; but I hope the very competent author of that analysis will in the meantime complete his proposed investigation, and correct the error into which he has fallen. You may rest assured, however, that whatever may be the result, the author of that analysis (I refer to my friend Doctor Piggot) is too much of a gentleman to descend to personalities if arguments fail.

I will add, that when MEXICAN GUANO would only command \$5 per ton, I purchased 10 tons at \$30, and being one of the first to appreciate and prove its value by analysis and experiment on my own farm, while the inspector was hesitating whether to admit it as Guano at all. I hope that my opinion of the COLOMBIAN will have equal weight, as it rests on seven times the evidence in the form of analysis twelve times repeated.

Highly as I appreciate the Mexican Guano, still, I do not hesitate to say that I would rather have four tons of COLOMBIAN than ten tons of Mexican, and I would rather have equal portions of COLOMBIAN and PERUVIAN applied to my wheat, than Peruvian alone, or any other super-phosphate alone. The fact that I have purchased seven tons of the Colombian Guano for each of my farms should seem to indicate the confidence which I place in it.

Respectfully yours, DAVID STEWART, M. D.,
Chemist of the Md. State Agricultural Society.

Baltimore Sept. 14th, 1863.

Reference is made to the following parties among others who have used the Colombian Guano:

Dr. Reese, State Inspector of Guano, Baltimore.
Messrs. Jesse Garnett, Davis Powell, J. K. Richardson, James Joyce, Baltimore county.

Abram Merritt, Ames Hollingsworth, Wm. Haviland, John Hollingsworth, Harford county.

Nathan C. Dickinson, Montgomery county.

Thomas Jones, Jr., Richmond county, Va.

P. S. The following is Professor Booth's opinion, referred to in the above card:

"The analysis of this GUANO indicates a remarkable substance, containing, naturally, eighty-four per cent. of dry Super-Phosphate of Lime. It will prove to be one of the most valuable fertilizers with which I am acquainted, and I would prefer it greatly to any artificial Super-Phosphate for any purpose to which the latter is applied."

JAMES C. BOOTH,
oct-11 "Analytical Chemist U. S. Mint, Philadelphia."

MILL SEAT AND FARM LANDS, Curtis Creek Furnace Property and Water Power FOR SALE.

THE undersigned, Trustee of John Barker, will sell at Public Auction, at the Exchange, in Baltimore, on THURSDAY, NOVEMBER 1ST, at one o'clock, 6,400 Acres Land, situated on Curtis Creek, and Marley Creek, above the property of the Patapsco and Curtis City Companies. The tract will be divided into lots of about 100 acres each. Lot No. 1, with which 300 acres are reserved, lies directly on Furnace Creek, with a depth of water at the WHARF sufficient for vessels drawing 8 or 9 feet. An improved WATER POWER, with a fall of 92 feet, and a regular supply, capable of driving a mill to turn out 150 to 200 barrels Flour per day, offers peculiar advantages to Millers.

The FURNACE, 7 miles by road, from Baltimore, and 8 miles by water, is 32 feet high, and 9 feet boshes, has been hitherto used with charcoal, but could easily be arranged for anthracite, which canal boats could deliver at the yard. The remainder of the property, mostly in Wood of various growth, Oak, Hickory and Pine, with abundance of Chestnut for fencing, is traversed through its whole extent by the Annapolis road, which is in good condition at all seasons. The land is well adapted for Fruit and Market-gardens, varying from stiff loam to lighter quality, affording advantages for the growing of early market crops. Two loads a day can be made to Baltimore from the nearest points of the tract—about six miles—and manures can be transported from the city by boats at a low cost. Springs abound over the property. The adjoining farms are in good cultivation.

The Rail Road, connecting Baltimore with the Southern route at Acquia Creek, is located to traverse the entire property.

Further information can be had of John Barker, Waterloo Row, who will be always ready to accompany parties wishing to inspect the lands.

Lithographs may be obtained from him. The large Map can be seen at the office of the Trustee.

TERMS.—One-fourth cash, one-fourth in six months, balance in twelve months, with interest from day of sale.

To purchasers of a considerable quantity, more liberal credit will be given by the Trustee, subject to the approval of the Court. W. W. GLENN, Trustee.

EVERY READER

WILL PLEASE NOTICE THE ADVERTISEMENT headed "THE GREAT BOOK OF THE YEAR," and send for a full descriptive Catalogue of all our illustrated Works.

To the uninitiated in the great art of selling books, we would say that we present a scheme for money making which is far better than all the gold mines of California and Australia.

Persons desirous of selling any one work alone, and canvassing a certain section of country or several Counties, will please confer with the subscriber, who will cheerfully answer every letter, as far as possible, on the day of its reception. Address, ROBERT SEARS, Publisher, oct1 181 William Street, N. Y.

NOTICE.—LITTLE GIANT.

ANY infringement of the patent of the LITTLE GIANT CORN & COB CRUSHER, either by selling into our territory, or attempting to infringe the patent, will be prosecuted to the utmost extent of the law.

ROBBINS & BIBB,

oct1-11 Light St., near Pratt, Baltimore.

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